ALPINE®

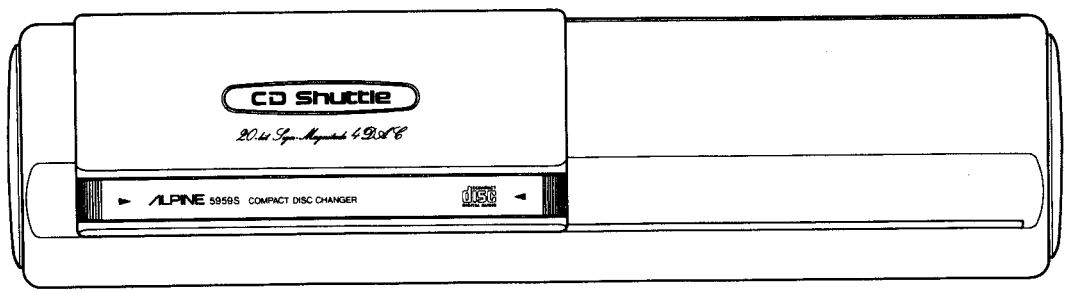
SERVICE MANUAL

Compact Disc Remote Changer

CD Shuttle

COMPACT disc DIGITAL AUDIO

- The model described in this manual is developed from Model 5959. For information that is not mentioned in this service manual, refer to the Service Manual 5959 (68P32103W02).
- For the CD deck mechanism parts (DR24A030) of this model, refer to the Service Manual • DR Series (68P30571W03).



5959S

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Specifications
Operation
Disassembly Instructions
Adjustment Locations
Description of IC Terminal
Packing Method View

→ Refer to the Service Manual 5959 (68P32103W02).

FEATURES

The 5959S incorporates the latest technology with the following unique functions and features:

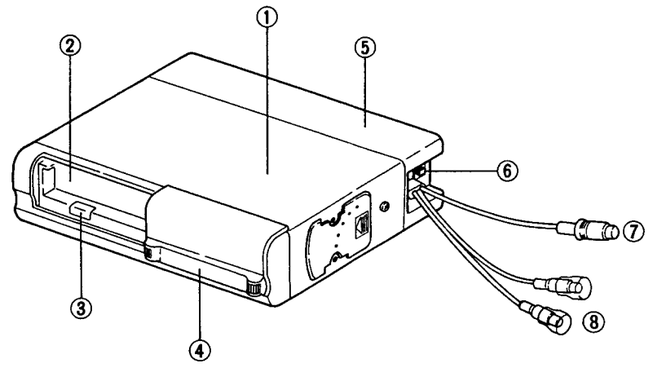
- **OPTICAL DIGITAL OUTPUT**
- **CD Shuttle MOUNTING VERSATILITY**
  The space-saving CD Shuttle can be mounted in a horizontal position, vertical position or one of the other three preset angles between 0° to 90°. This allows the installer to choose from a variety of mounting locations including: the trunk, under or behind the seat, or the glove compartment.
- **8X OVERSAMPLING**
- **20-bit SIGN-MAGNITUDE DAC**
  The Sign-Magnitude method of digital to analog conversion minimizes the zero-crossing distortion. 20-bit technology increases dynamic range and signal-to-noise.
- **HIGH PERFORMANCE, ISOLATED AUDIO SECTION**
  By separating the audio section into its own isolated box, performance equal to high-grade, home preamplifiers is achieved.
- **MAGAZINE HOUSING 6 CDs**
  Six 5-inch (12 cm) compact discs can be housed in the CD magazine and selected by operating your control unit. Any one of the 6 CDs in the magazine can be quickly and easily accessed for playback of the entire disc or individual selections.

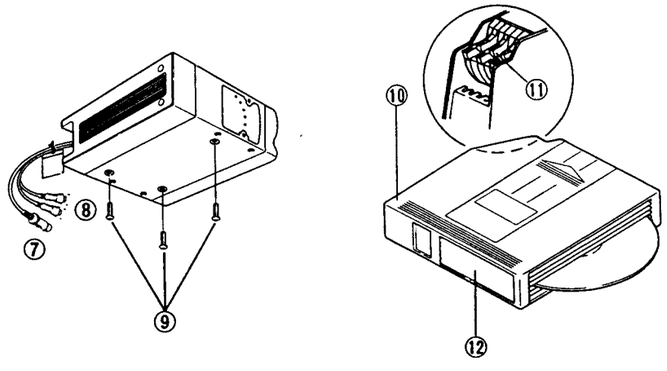
IMPORTANT NOTICE

This compact disc Shuttle has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules. This equipment generates and uses radio frequency energy, and it must be installed and used properly in accordance with the manufacturer's instructions.

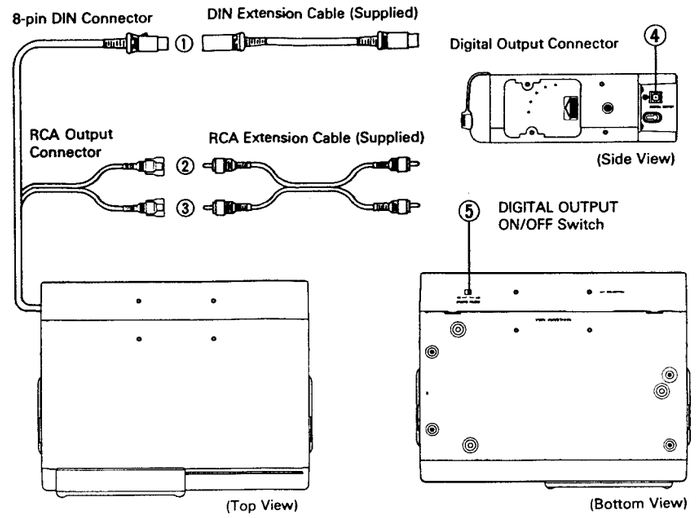
PARTS IDENTIFICATION

① **CD Shuttle Unit**
② **CD Magazine Insertion Slot**
③ **Eject Button**
Press this button to eject the CD magazine.
④ **CD Magazine Door**
⑤ **Audio Block**
⑥ **Digital Output Connector**
⑦ **8-pin DIN Connector**
⑧ **Audio Connectors (RCA type) for the Right and Left Channels**
⑨ **Shipping Screws**
Must be removed before operating the unit.
⑩ **CD Magazine**
6 discs can be housed in this case.
⑪ **Disc Lever**
⑫ **Disc Index Labels**
Put the Index Label on the CD Magazine.





CONNECTIONS



The 5959S CD Shuttle is not equipped with built-in control unit and power amplifier. Consult with your authorized Alpine dealer for connections of your control unit and power amplifier. Refer to the illustration above for connections of the Shuttle.

NOTE:
The 5959S is designed for 12-volt DC negative ground operation so make sure that your vehicle has this system before making electrical connections.

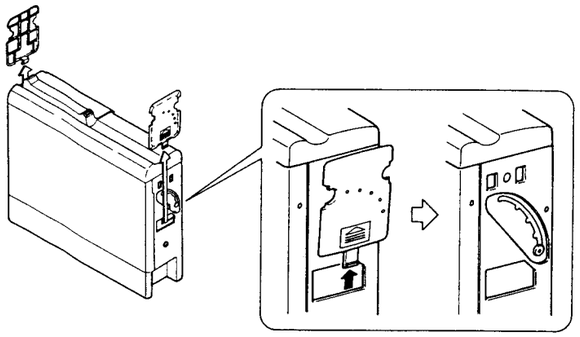
① **8-pin DIN Connector**
Connect this to your control unit or changer control input of your Alpine Shuttle-ready head unit.
② **Right Channel RCA Output Connector (Red)**
Connect this to the right channel input of your control unit.
③ **Left Channel RCA Output Connector (White)**
Connect this to the left channel input of your control unit.
④ **Digital Output Connector**
Connect this output to a processor having a corresponding optical digital input using the fiber-optic cable supplied with the processor.
⑤ **DIGITAL OUTPUT ON/OFF Switch**
Use this switch to turn the digital outputs on and off. Always set to the OFF position when the digital outputs are not being used.

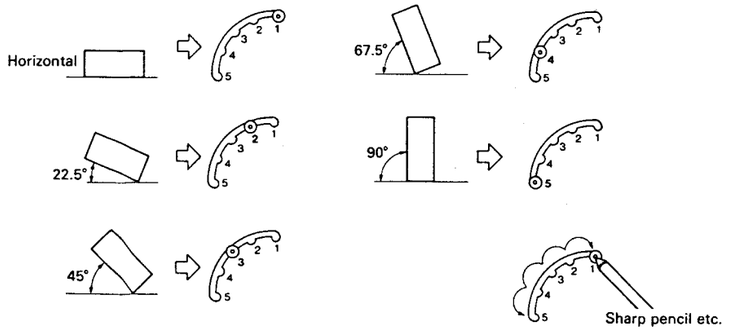
INSTALLATION

Changing of Spring Position

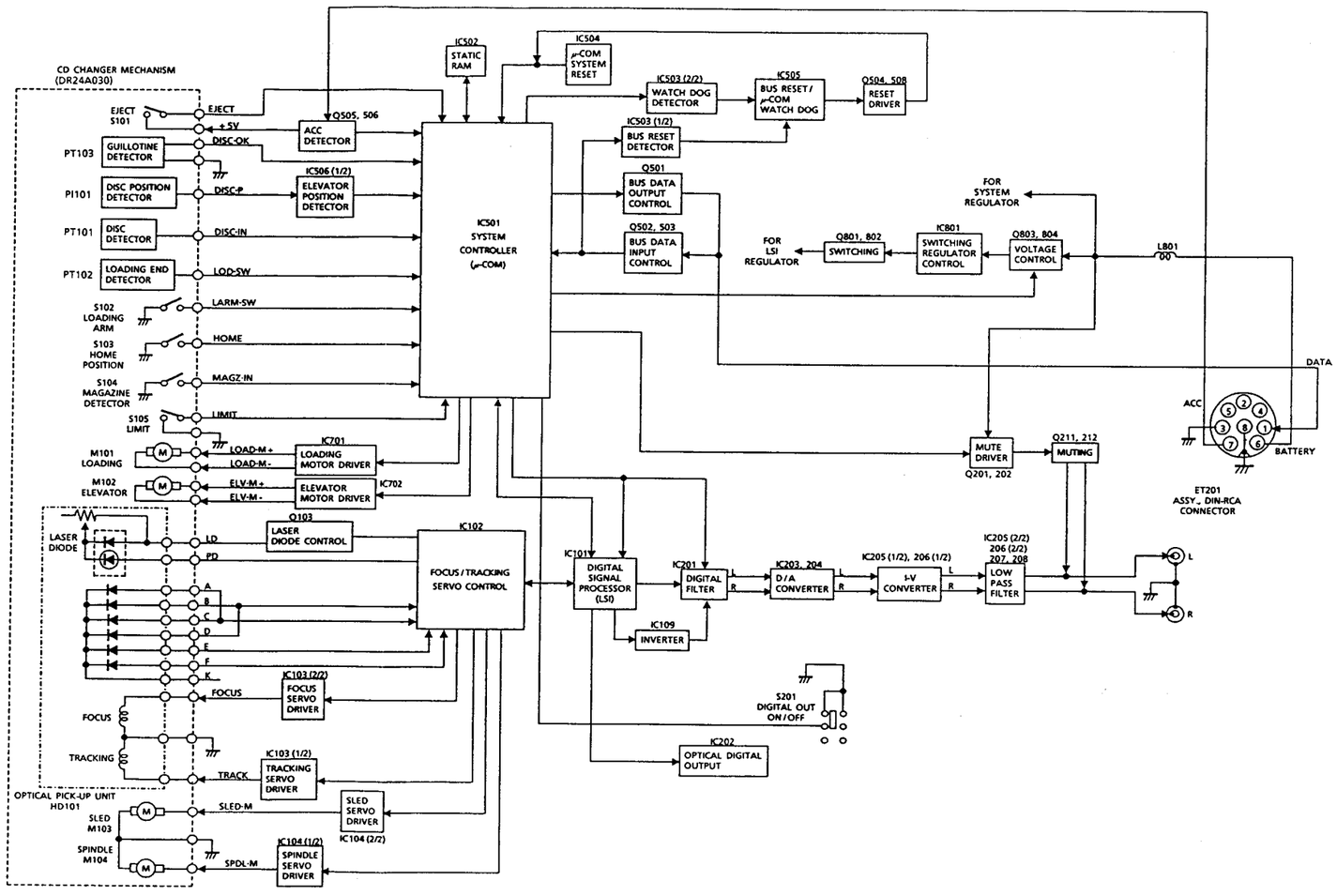
Make sure the mounting angle of the Shuttle installation will fall within the five preset positions (22.5° or 45° from the horizontal or vertical position). The Shuttle is preset at the factory for horizontal mounting. If you wish to install it at any other angle, change the spring configuration as shown.

Slide, in the direction of the arrows, then remove the left and right side covers. Change the position of the spring with your finger or a pointed object. Use the figure below to determine which spring position would be best suited for your chosen mounting location. If the spring configuration is incorrect or the spring positions on the left and right sides are not the same, the shock absorbing mechanism will not function properly. This will prevent the CD Shuttle from operating at its best.



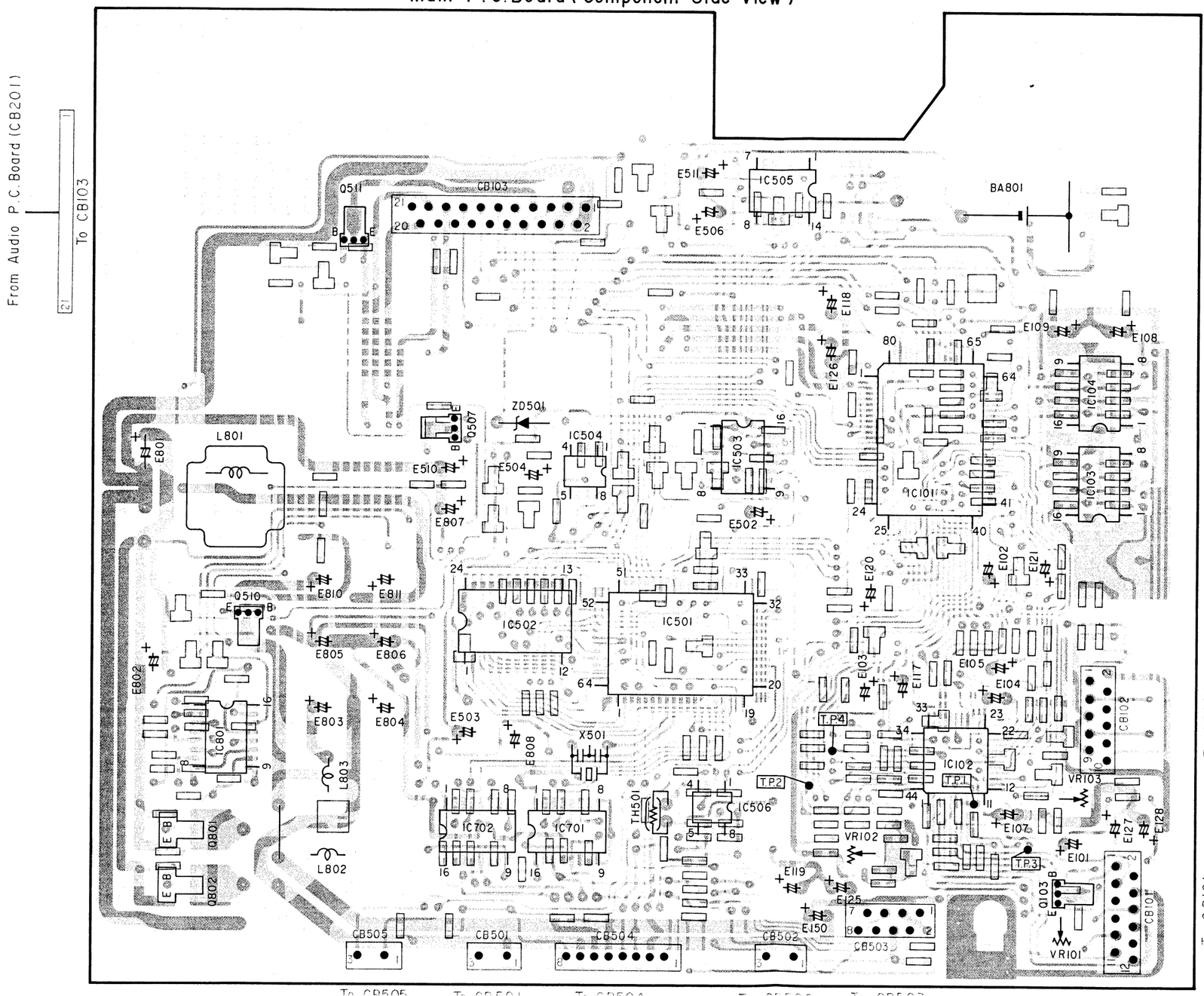


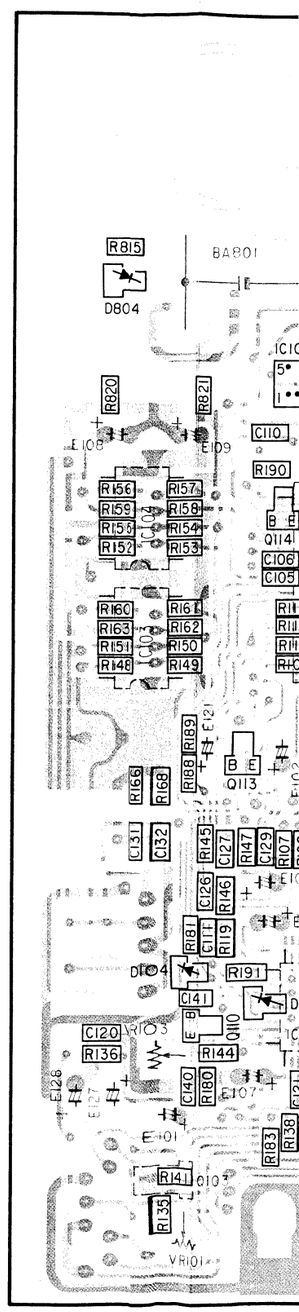
Block Diagram



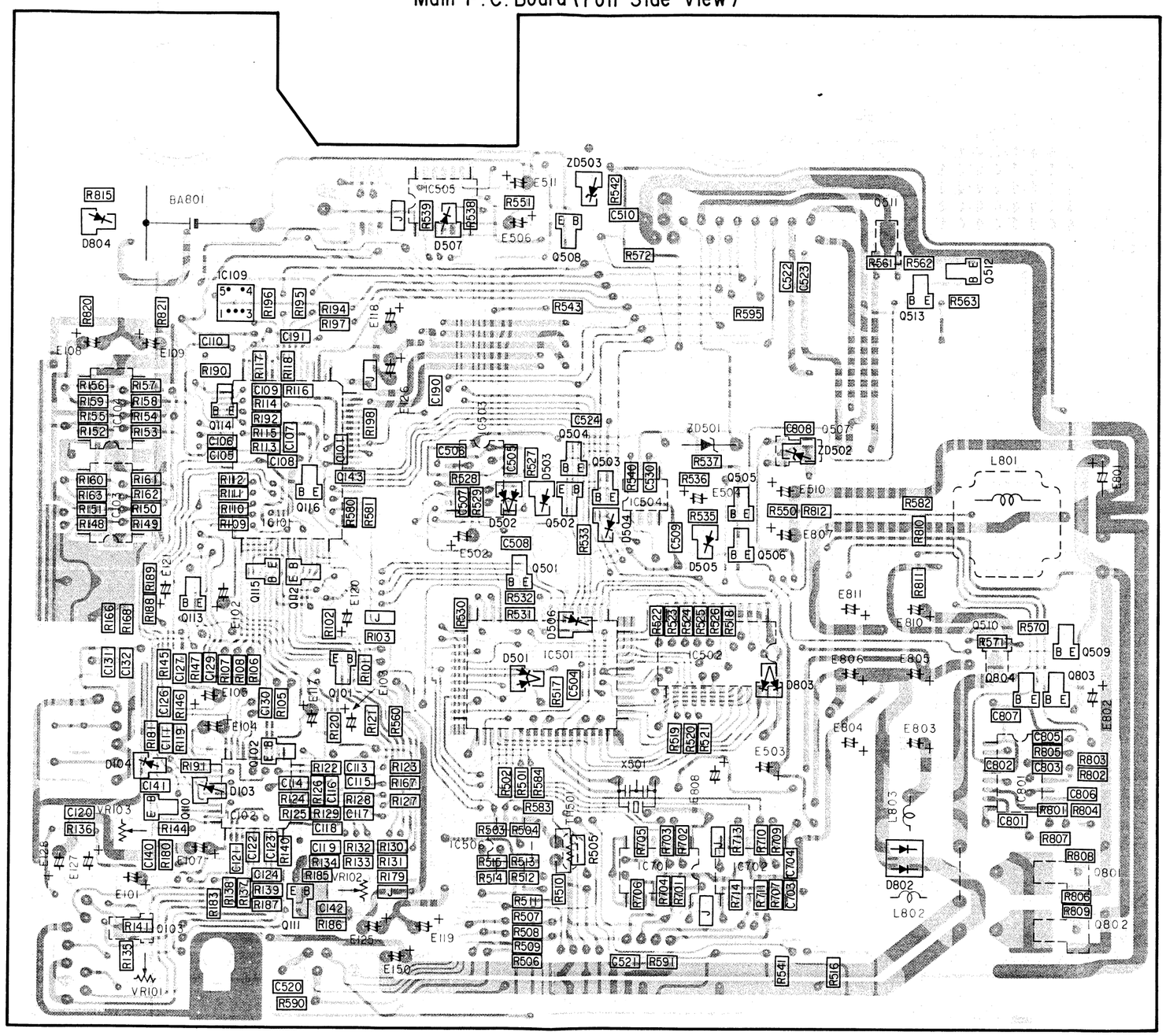
Parts Layout on P.C. Boards and Wiring Diagram (1/2)

Main P.C.Board (Component Side View)





Main P.C.Board (Foil Side View)


BA801
D804
IC109
IC505
D507
E506
Q508
ZD503
R542
C510
Q511
R561
R562
Q512
R563
Q513
R572
R543
R595
C522
C523
C524
ZD501
ZD502
C808
Q507
L801
E810
R582
R550
R812
R535
D505
Q506
E807
E811
R811
R810
Q510
R570
R571
Q509
Q804
Q803
C807
C805
R805
C802
C803
R803
R802
C806
R801
R804
C801
R807
R808
Q801
R606
R609
Q802
E806
E805
E804
E803
D803
D802
L802
L803
E503
X501
IC501
IC502
IC503
IC504
IC506
IC701
IC702
D501
D502
Q501
Q502
Q503
Q504
Q505
E504
E502
R533
R532
R531
R530
R528
R527
R529
R507
R508
R509
R506
R511
R517
C504
R502
R501
R584
R583
R503
R504
R516
R513
R514
R512
R510
R505
R519
R520
R521
C521
R591
R541
R516
R705
R703
R702
R713
R710
R709
C704
R706
R704
R701
R714
R711
R707
C703
C520
R590
E150
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Q114
Q116
Q115
Q113
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Q112
Q110
Q109
Q108
Q107
Q106
Q105
Q104
Q103
Q102
Q101
Q143
D103
D104
VR103
VR102
VR101
C110
C191
C190
C109
C116
C114
C192
C115
C106
C105
C108
C107
C101
C143
C112
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C113
C117
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C120
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C137
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C136
C135
R820
R821
R815
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R580
R581
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R103
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R121
R560
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R127
R128
R167
R1217
R132
R130
R134
R133
R131
R185
R179
R186
R139
R140
R138
R137
R114
R1214
R1215
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R1246
R1247
R1248
R1249
R1250
R1251
R1252
R1253
R1254
R1255
R1256
R1257

Parts Layout on P.C. Boards and Wiring Diagram (2/2)

All P.C. Boards viewed from soldered side.

FPC Actuate P. C. Board

Sled Motor (M103)

Spindle Motor (M104)

BLK

RED

To B

Limit Switch (S105)

Magazine Photo P. C. Board

PT103

BRN

RED

Interrupt P. C

S103

PI101

QI003

CW104

To CW104

WHT(7)

WHT(6)

WHT(5)

WHT(4)

WHT(3)

WHT(2)

WHT(1)

GRY

LED P. C. Board

LD102

LD103

Pick-Up Unit (HDI01)

YEL

ORG

LD101

Magazine LED P. C. Board

GRN

BLU

To CWIO

CWI01

Switch P. C. Boa

FPC Elevator P. C. Board

To A

Assy., DIN-RCA Connector (ET201)

RCH

LCH

BLU

BLU

BLU

Lug

BLK

SHLD

BLK(GND)

YEL(BATT)

RED(ACC)

BRN

BRN(DATA)

SHLD(D-GND)

SHLD

WHT(LCH)

SHLD

RED(RCH)

To CB202

IC202

R206

E243

E240

L203

Q201

Q202

E229

R233

D201

Q211

R231

R227

R229

R225

R234

D202

Q212

E230

R232

R230

R228

R226

D801

CB202

S201

PT101

R1001

R1002

Sensor P. C. Board

Loading Motor (MI01)

SI02

PT102

from soldered side.

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Magazine Photo P. C. Board

PT103

BRN RED

Interrupt P. C. Board

S103 PT101 Q1003 B E CW104 8 1

S104

To CW104

8 1 WHT(7) WHT(6) WHT(5) WHT(4) WHT(3) WHT(2) WHT(1) GRY

M

Elevator Motor (M102)

Main P. C. Board

CB103 2 20

CB102 10 1

CB101 12 1

CB503 2 7 8

CB502 1 3

CB504 1 8

CB501 1 3

CB505 1 3

③ ⑤ ⑥ ④ ⑦

① ②

④ ⑤ ⑥ ⑦

YEL ORG

Magazine LED P. C. Board

LD101

GRN BLU

To CW101

CW101 1 3

S101

Switch P. C. Board

Connector

RCH LCH BLU

Lug

BLK SHLD BLK(GND) YEL(BATT) RED(ACC) BRN BRN(DATA) SHLD(D-GND) SHLD WHT(LCH) SHLD RED(RCH)

To CB202 1 9

Audio P. C. Board

IC202 R206 E243 E240 L203

D801 CB202 S201

Q201 Q202 E229 R233 D201 D202 Q211 Q212 R231 R229 R227 R225 R234 R232 R230 R228 R226 E230

IC207 IC208 IC205 IC206

R219 R221 R215 R213 C213 R217 C215 R223 C217 R220 R222 C218 R224 R216 R214 C214 R218 C216

E233 E231 E225 E227 E232 E234 E226 E228

IC203 IC204

R211 C211 R237 C221 R235 E203 E202 R212 C212 R238 C220 R236

E211 E213 E217 E219 E215 E212 E214 E218 E216 E220

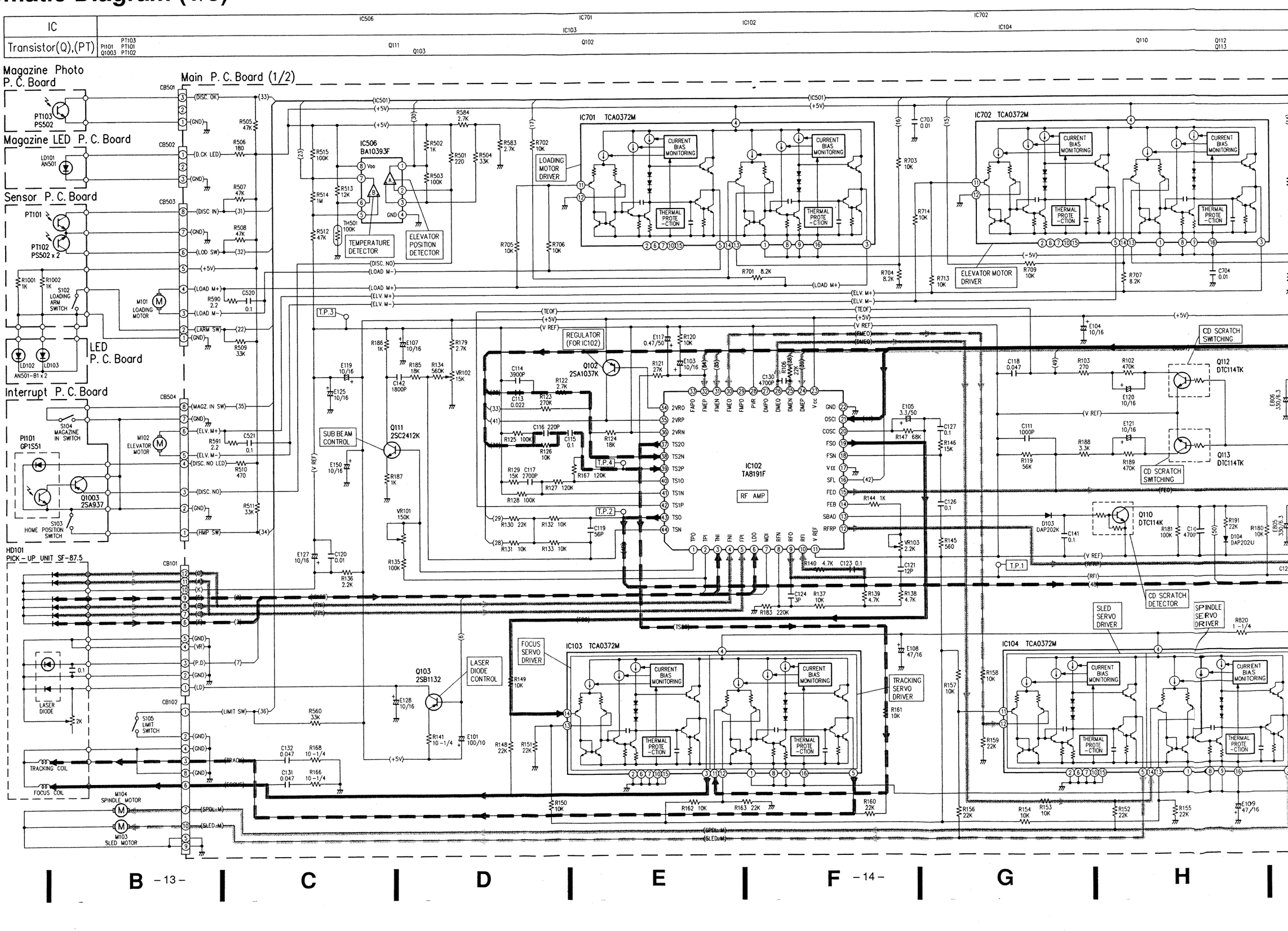
C202 C203 X201 E201 IC201 R202 R204 R205 C237 R201 C232

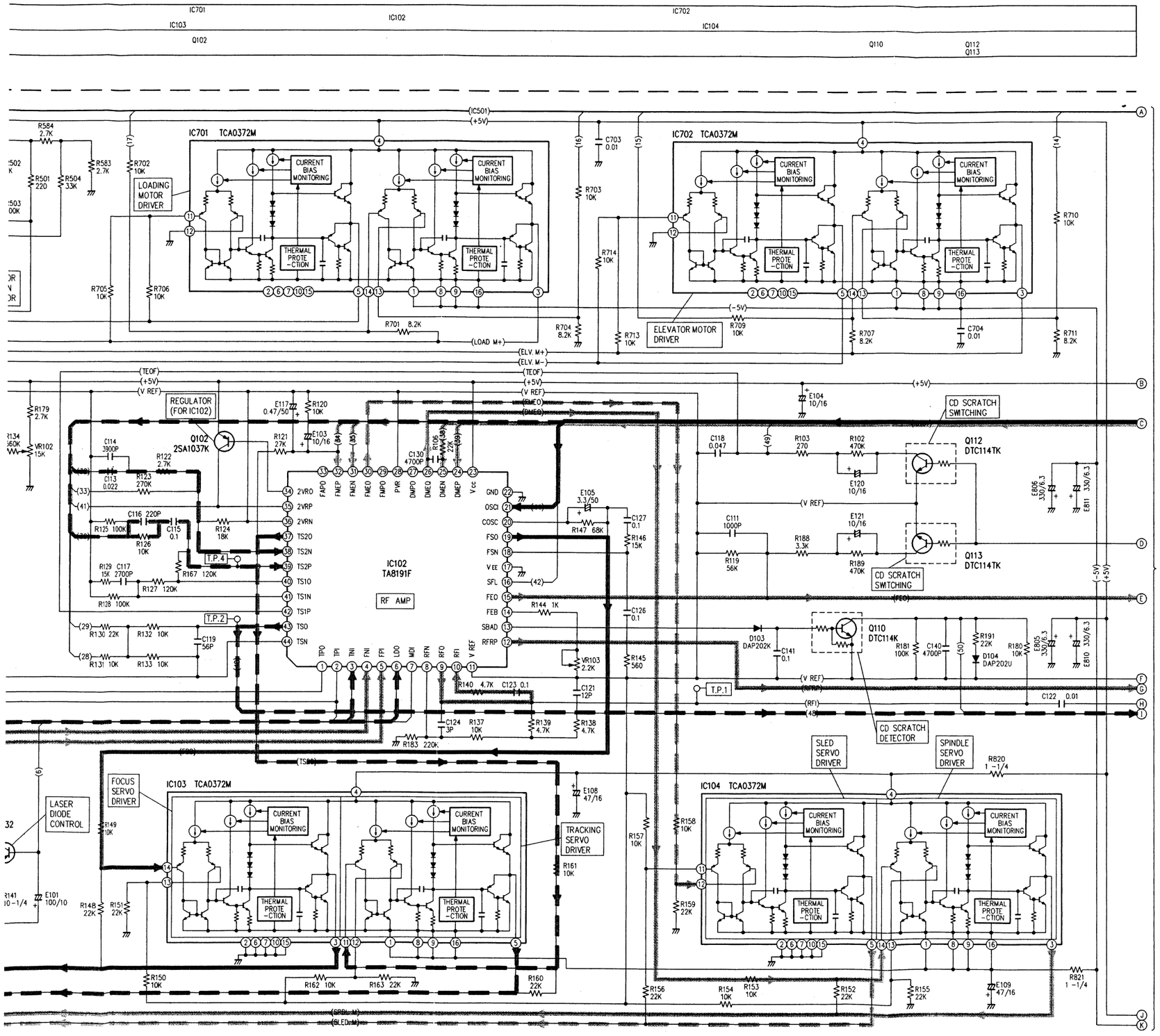
CB201 20 21 2 1

To CB201 21 1

F G -11- H I J K -12- L M

Schematic Diagram (1/3)





IC102

1	1.8V	11	2.1V	21	2.5V	31	2.1V	41	2.1V
2	2.1V	12	2.3V	22	0V	32	2.1V	42	2.1V
3	2.1V	13	2.4V	23	5.1V	33	2.1V	43	2.1V
4	2.1V	14	2.1V	24	2.2V	34	4.5V	44	2.1V
5	2.1V	15	2.1V	25	2.2V	35	4.2V		
6	PS	16	5.1V	26	PS	36	2.1V		
7	PS	17	0V	27	PS	37	2.1V		
8	PS	18	2.1V	28	2.1V	38	2.1V		
9	PS	19	2.1V	29	PS	39	2.1V		
10	PS	20	2.1V	30	PS	40	2.1V		

IC103

1	-5V	9	-5V
2	0V	10	0V
3	PS	11	0V
4	5.1V	12	0V
5	PS	13	1.5V
6	0V	14	1.5V
7	0V	15	0V
8	-5V	16	0V

IC104

1	-5V	9	-5V
2	0V	10	0V
3	PS	11	1.5V
4	5.1V	12	PS
5	PS	13	0V
6	0V	14	1.5V
7	0V	15	0V
8	-5V	16	0.2V

IC506

1	0V
2	5.1V
3	1.6V
4	0V
5	2V
6	5V
7	0V
8	5.1V

IC701

1	0.2V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.3V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

IC702

1	-5V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.2V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

	E	C	B
Q102	5.1V	4.2V	4.5V
Q103	5.1V	0V	4.7V
Q110	2.1V	2.4V	2.2V
Q111	1.2V	1.2V	1.8V
Q112	2.1V	2.1V	0V
Q113	2.1V	2.1V	0V

(Measuring Conditions)

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Volt Meter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz) Digital Output Switch (OFF)

- CD Signal Line (Digital)
- Focus Servo Signal Line
- Tracking Servo Signal Line
- Spindle Servo Signal Line
- Sled Servo Signal Line

NOTES:

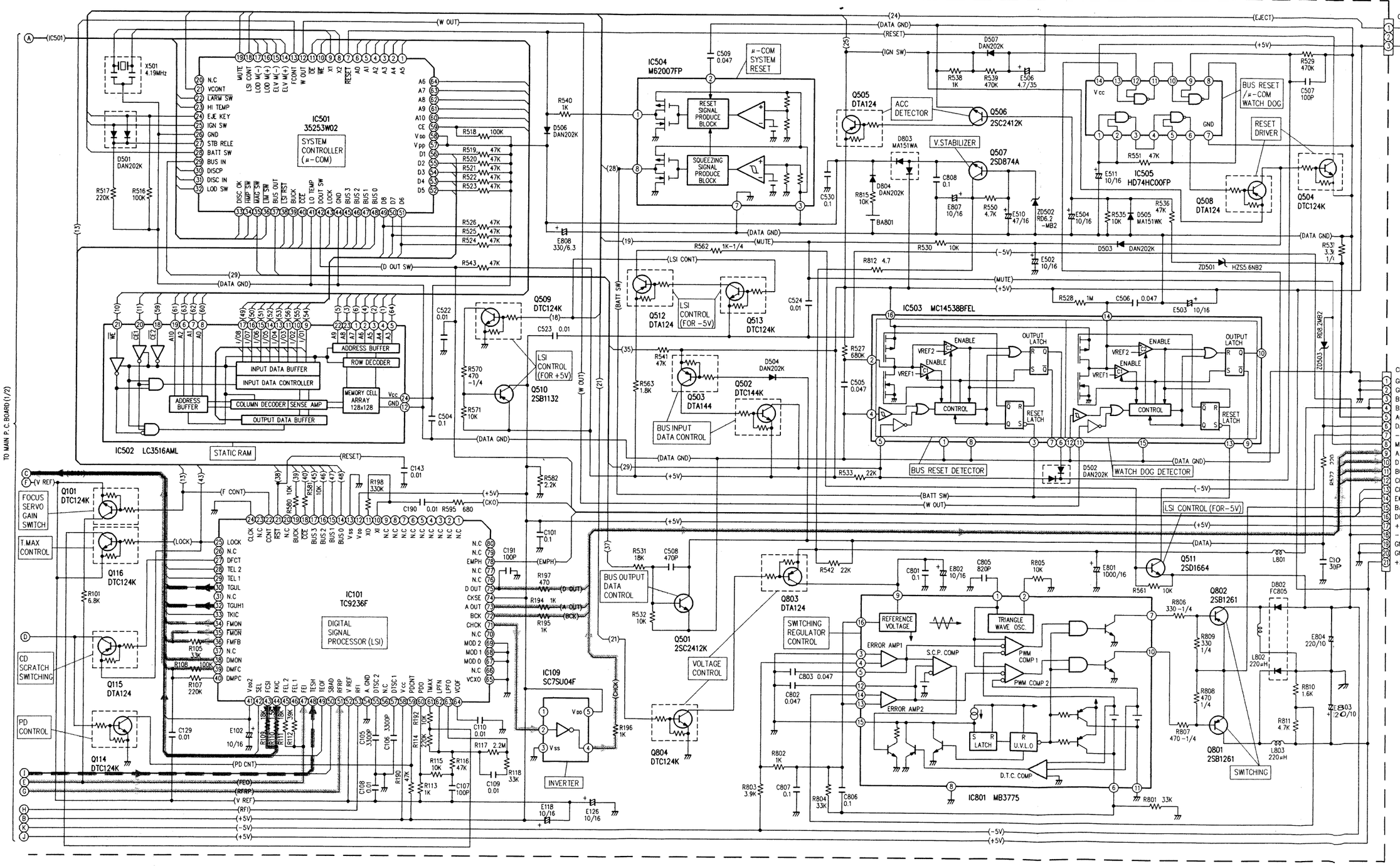
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

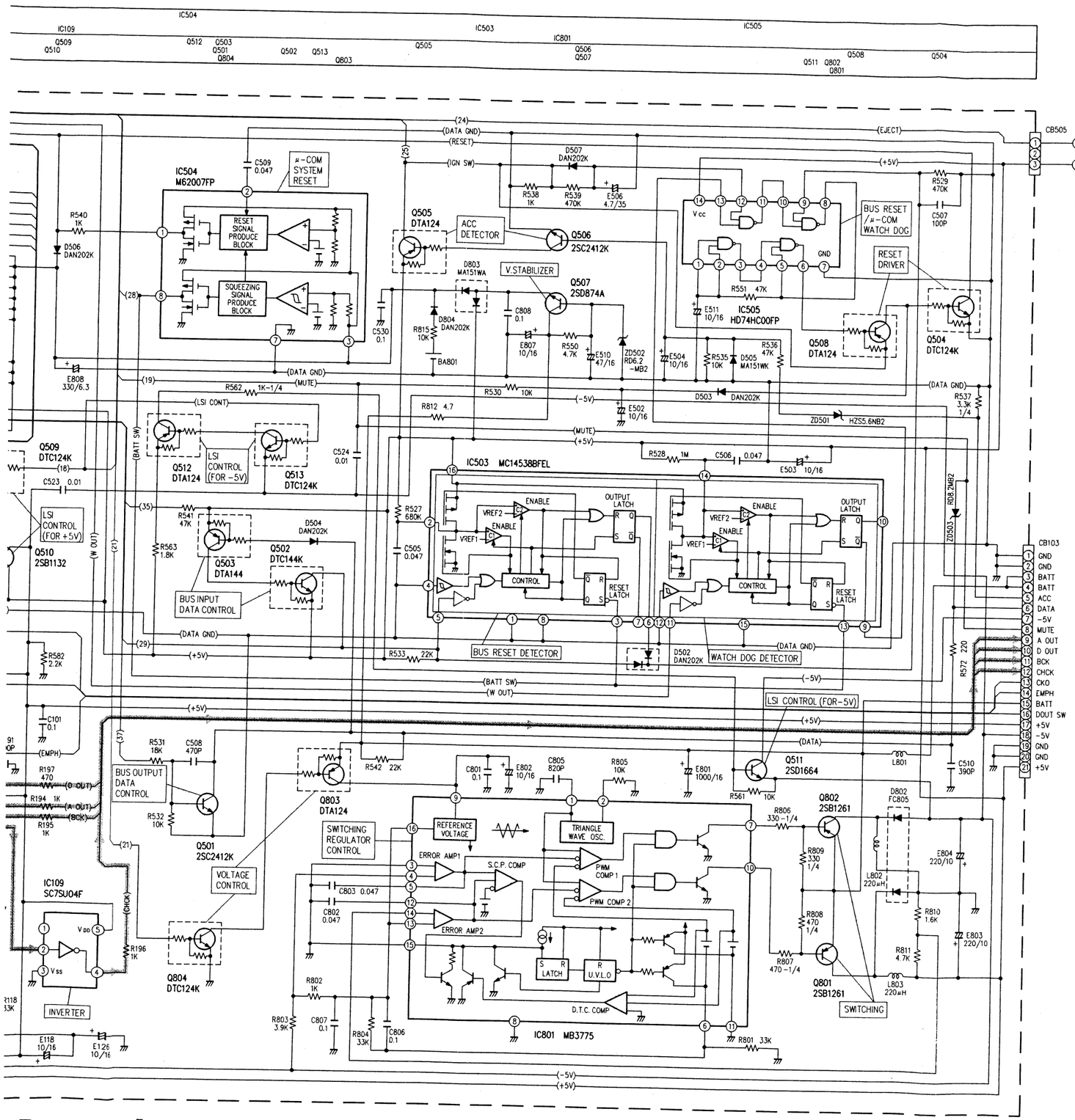
5959S 5959S

Schematic Diagram (2/3)

IC	IC502	IC501	IC101	IC109	IC504	IC503	IC801	IC505
Transistor (Q)	Q101 Q116 Q114 Q115	Q509 Q510	Q512 Q503 Q501 Q804	Q502 Q513 Q803	Q505	Q506 Q507	Q511 Q802 Q801	Q508 Q504

Main P. C. Board (2/2)





IC101

1	5.1V	17	PS	33	2V	49	2.1V	65	0V
2	5.1V	18	PS	34	2.1V	50	2.4V	66	0V
3	2.4V	19	PS	35	2.1V	51	2.3V	67	0V
4	1.7V	20	1.7V	36	2.1V	52	2.1V	68	0V
5	PS	21	5V	37	5.1V	53	2.5V	69	0V
6	2.4V	22	0V	38	2.1V	54	0V	70	2.6V
7	0.1V	23	0.1V	39	2.1V	55	2.5V	71	2.6V
8	PS	24	0V	40	2.4V	56	2.5V	72	2.5V
9	5.1V	25	5.1V	41	4.2V	57	2.5V	73	0V
10	2.4V	26	5.1V	42	5.1V	58	5.1V	74	5.1V
11	2.4V	27	5.1V	43	2.5V	59	5.1V	75	0V
12	5.1V	28	2.1V	44	2.5V	60	2V	76	5.1V
13	0V	29	2.1V	45	2.1V	61	2.1V	77	5.1V
14	PS	30	2.1V	46	2.1V	62	2.1V	78	0V
15	PS	31	0.3V	47	2.1V	63	2.3V	79	5.1V
16	PS	32	2.1V	48	2.1V	64	1.9V	80	2.2V

IC109

1	0V
2	2.5V
3	0V
4	2.6V
5	5.1V

IC501

1	0V	17	0V	33	0.1V	49	5V
2	0V	18	5V	34	0V	50	5V
3	0V	19	0V	35	0V	51	5V
4	0V	20	0V	36	5.1V	52	5V
5	0V	21	5V	37	PS	53	5V
6	5V	22	0V	38	5V	54	5V
7	5V	23	0V	39	PS	55	5V
8	2.7V	24	0V	40	PS	56	5V
9	2.6V	25	5.2V	41	0V	57	PS
10	5V	26	0V	42	0V	58	5V
11	5V	27	4.8V	43	5.1V	59	0V
12	PS	28	5V	44	0V	60	0V
13	0V	29	PS	45	PS	61	0V
14	0V	30	0V	46	PS	62	0V
15	0V	31	5V	47	PS	63	0V
16	0V	32	0.14V	48	PS	64	0V

IC504

1	5V
2	5V
3	5V
4	0V
5	0V
6	0V
7	0V
8	5V

IC502

1	5V	9	5V	17	5V
2	0V	10	5V	18	0V
3	0V	11	5V	19	0V
4	0V	12	0V	20	5V
5	0V	13	5V	21	5V
6	0V	14	5V	22	5V
7	0V	15	5V	23	0V
8	0V	16	5V	24	5V

IC503

1	0V	9	0V
2	5V	10	0V
3	5V	11	PS
4	0V	12	0V
5	5V	13	5V
6	5V	14	5V
7	5V	15	0V
8	0V	16	5V

IC505

1	0V	8	0V
2	0V	9	PS
3	5.2V	10	5.2V
4	5.2V	11	5.2V
5	0V	12	5V
6	5.2V	13	0V
7	0V	14	5.2V

IC801

1	5V	9	5V
2	0V	10	PS
3	0V	11	5V
4	0V	12	0V
5	0V	13	1.3V
6	0V	14	1.3V
7	PS	15	0V
8	0V	16	1.3V

	E	C	B
Q101	2.1V	2.1V	0V
Q114	0V	PS	PS
Q115	5.1V	0V	5.1V
Q116	2.1V	2.1V	4.9V
Q501	0V	PS	PS
Q502	0V	PS	PS
Q503	5.2V	PS	PS
Q504	0V	5V	0V
Q505	5.2V	5.1V	0V
Q506	0V	0V	0.6V
Q507	5.8V	13.1V	0V
Q508	5.2V	0V	5.2V
Q509	0V	0.1V	5V
Q510	5.2V	5.1V	4.4V
Q511	−5V	−4.9V	−4.3V
Q512	1.4V	−2.3V	0V
Q513	0V	0V	5V
Q801	13.7V	5.3V	13.3V
Q802	13.7V	0.1V	13.4V
Q803	13.6V	13.6V	0V
Q804	0V	0V	5V

(Measuring Conditions)

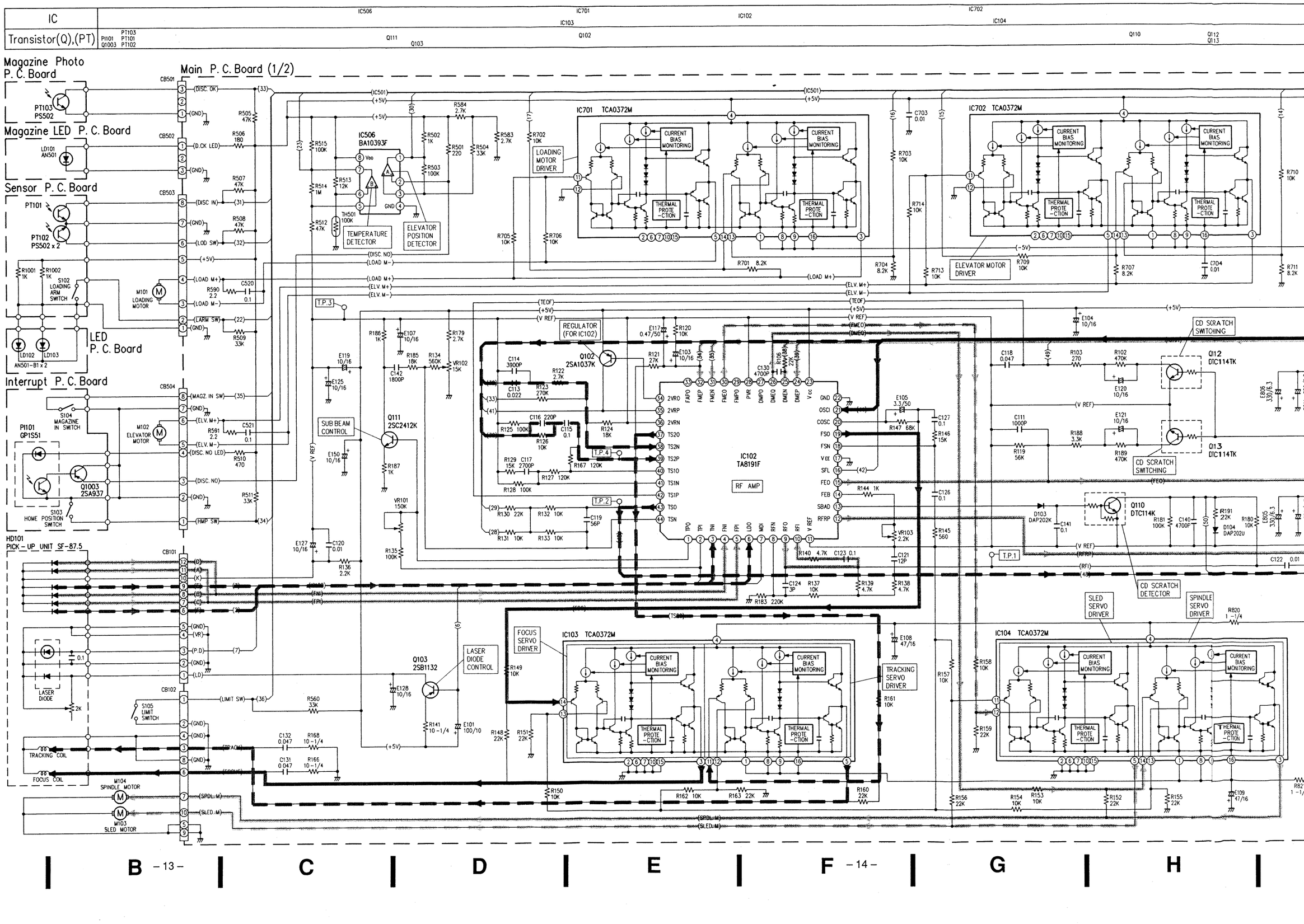
1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Volt Meter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
   Digital Output Switch (OFF)

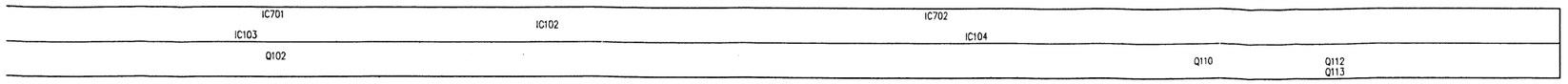
CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

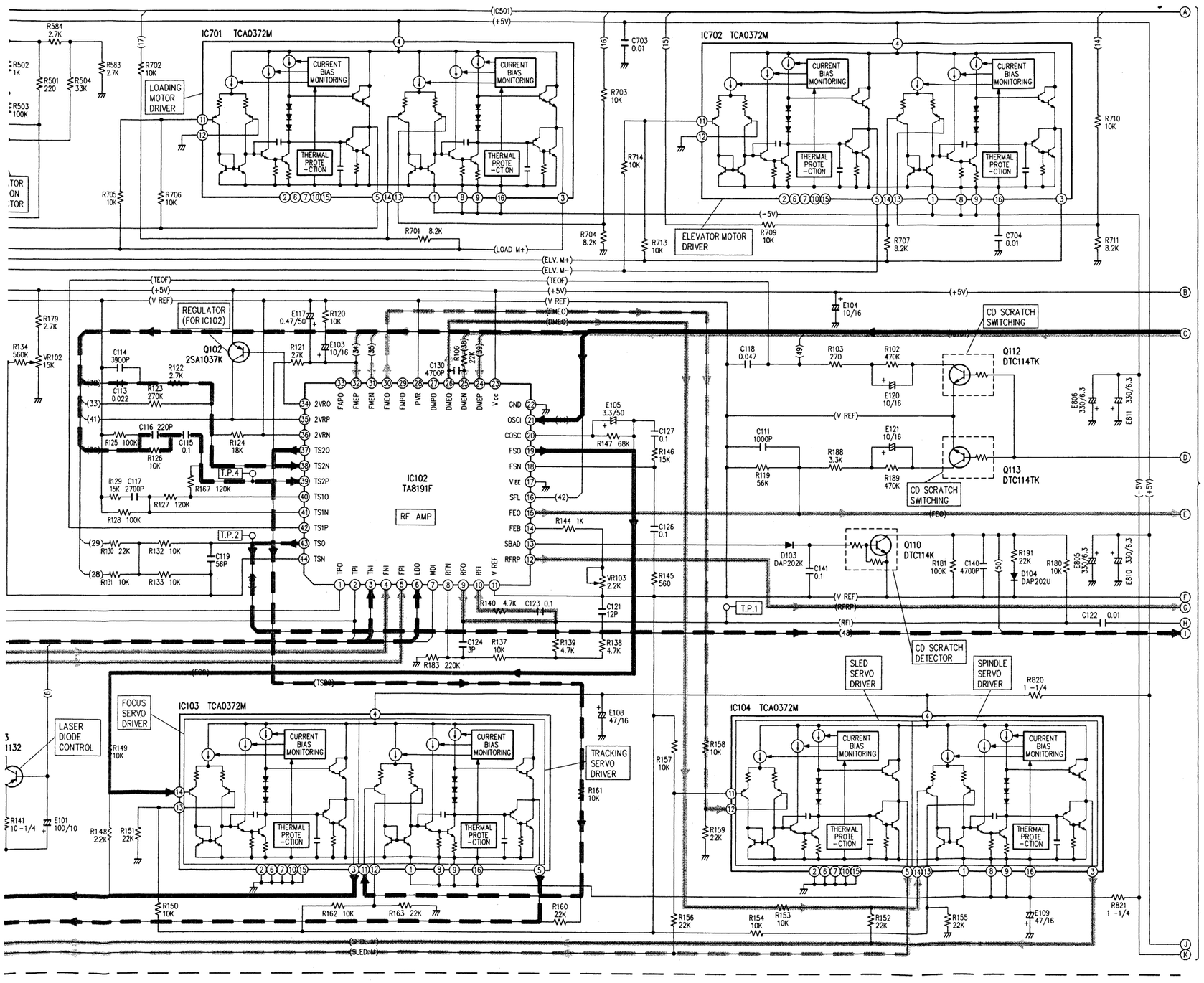
NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (1/3)







IC102

1	1.8V	11	2.1V	21	2.5V	31	2.1V	41	2.1V
2	2.1V	12	2.3V	22	0V	32	2.1V	42	2.1V
3	2.1V	13	2.4V	23	5.1V	33	2.1V	43	2.1V
4	2.1V	14	2.1V	24	2.2V	34	4.5V	44	2.1V
5	2.1V	15	2.1V	25	2.2V	35	4.2V		
6	PS	16	5.1V	26	PS	36	2.1V		
7	PS	17	0V	27	PS	37	2.1V		
8	PS	18	2.1V	28	2.1V	38	2.1V		
9	PS	19	2.1V	29	PS	39	2.1V		
10	PS	20	2.1V	30	PS	40	2.1V		

IC103

1	-5V	9	-5V
2	0V	10	0V
3	PS	11	0V
4	5.1V	12	0V
5	PS	13	1.5V
6	0V	14	1.5V
7	0V	15	0V
8	-5V	16	0V

IC104

1	-5V	9	-5V
2	0V	10	0V
3	PS	11	1.5V
4	5.1V	12	PS
5	PS	13	0V
6	0V	14	1.5V
7	0V	15	0V
8	-5V	16	0.2V

IC506

1	0V	9	
2	5.1V	10	
3	1.6V	11	
4	0V	12	
5	2V	13	
6	5V	14	
7	0V	15	
8	5.1V	16	

IC701

1	0.2V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.3V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

IC702

1	-5V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.2V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

	E	C	B
Q102	5.1V	4.2V	4.5V
Q103	5.1V	0V	4.7V
Q110	2.1V	2.4V	2.2V
Q111	1.2V	1.2V	1.8V
Q112	2.1V	2.1V	0V
Q113	2.1V	2.1V	0V

(Measuring Conditions)

1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

NOTES:

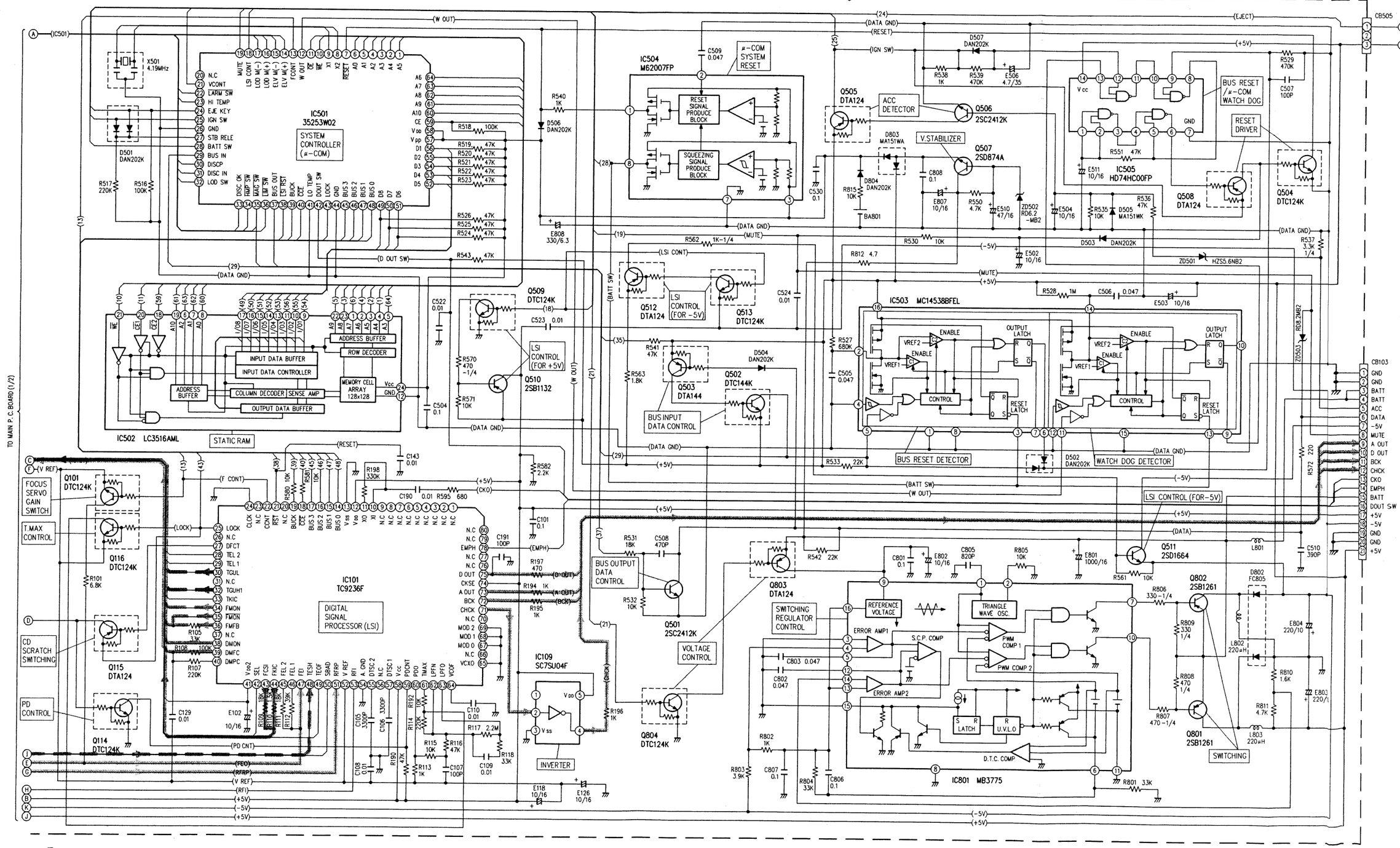
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

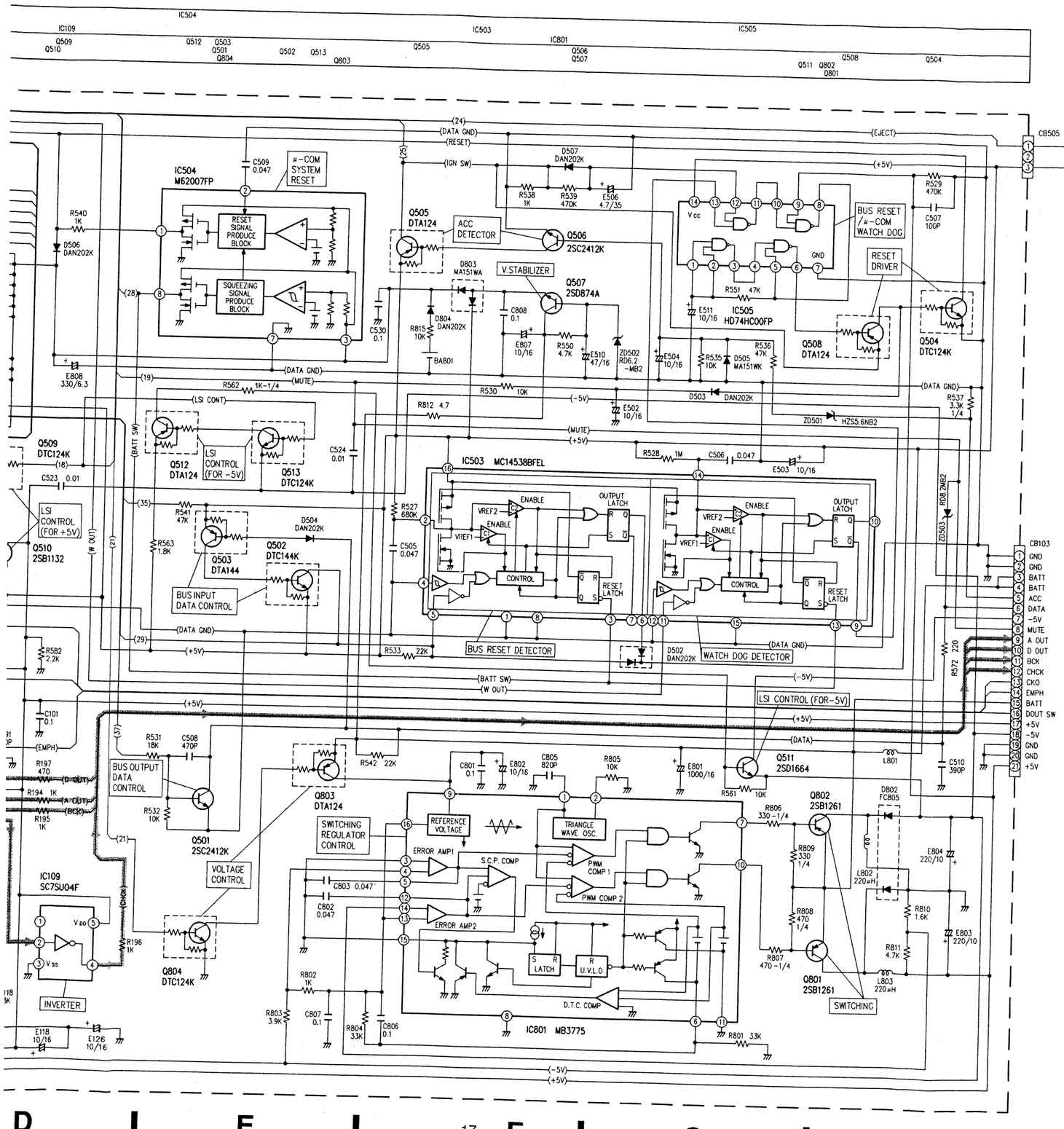
5959S 5959S

Schematic Diagram (2/3)

IC	IC502	IC501	IC101	IC109	IC504	IC503	IC801	IC505
Transistor (Q)	Q101 Q116 Q114 Q115			Q509 Q510	Q512 Q503 Q501 Q804	Q502 Q513 Q803	Q505	Q506 Q507	Q511 Q802 Q801	Q508	Q504

Main P. C. Board (2/2)





IC101

1	5.1V	17	PS	33	2V	49	2.1V	65	0V
2	5.1V	18	PS	34	2.1V	50	2.4V	66	0V
3	2.4V	19	PS	35	2.1V	51	2.3V	67	0V
4	1.7V	20	1.7V	36	2.1V	52	2.1V	68	0V
5	PS	21	5V	37	5.1V	53	2.5V	69	0V
6	2.4V	22	0V	38	2.1V	54	0V	70	2.6V
7	0.1V	23	0.1V	39	2.1V	55	2.5V	71	2.6V
8	PS	24	0V	40	2.4V	56	2.5V	72	2.5V
9	5.1V	25	5.1V	41	4.2V	57	2.5V	73	0V
10	2.4V	26	5.1V	42	5.1V	58	5.1V	74	5.1V
11	2.4V	27	5.1V	43	2.5V	59	5.1V	75	0V
12	5.1V	28	2.1V	44	2.5V	60	2V	76	5.1V
13	0V	29	2.1V	45	2.1V	61	2.1V	77	5.1V
14	PS	30	2.1V	46	2.1V	62	2.1V	78	0V
15	PS	31	0.3V	47	2.1V	63	2.3V	79	5.1V
16	PS	32	2.1V	48	2.1V	64	1.9V	80	2.2V

IC109

1	0V
2	2.5V
3	0V
4	2.6V
5	5.1V

IC501

1	0V	17	0V	33	0.1V	49	5V		
2	0V	18	5V	34	0V	50	5V		
3	0V	19	0V	35	0V	51	5V		
4	0V	20	0V	36	5.1V	52	5V		
5	0V	21	5V	37	PS	53	5V		
6	5V	22	0V	38	5V	54	5V		
7	5V	23	0V	39	PS	55	5V		
8	2.7V	24	0V	40	PS	56	5V		
9	2.6V	25	5.2V	41	0V	57	PS		
10	5V	26	0V	42	0V	58	5V		
11	5V	27	4.8V	43	5.1V	59	0V		
12	PS	28	5V	44	0V	60	0V		
13	0V	29	PS	45	PS	61	0V		
14	0V	30	0V	46	PS	62	0V		
15	0V	31	5V	47	PS	63	0V		
16	0V	32	0.14V	48	PS	64	0V		

IC504

1	5V
2	5V
3	5V
4	0V
5	0V
6	0V
7	0V
8	5V

IC502

1	5V	9	5V	17	5V
2	0V	10	5V	18	0V
3	0V	11	5V	19	0V
4	0V	12	0V	20	5V
5	0V	13	5V	21	5V
6	0V	14	5V	22	5V
7	0V	15	5V	23	0V
8	0V	16	5V	24	5V

IC503

1	0V	9	0V
2	5V	10	0V
3	5V	11	PS
4	0V	12	0V
5	5V	13	5V
6	5V	14	5V
7	5V	15	0V
8	0V	16	5V

IC505

1	0V	8	0V
2	0V	9	PS
3	5.2V	10	5.2V
4	5.2V	11	5.2V
5	0V	12	5V
6	5.2V	13	0V
7	0V	14	5.2V

IC801

1	5V	9	5V
2	0V	10	PS
3	0V	11	5V
4	0V	12	0V
5	0V	13	1.3V
6	0V	14	1.3V
7	PS	15	0V
8	0V	16	1.3V

	E	C	B
Q101	2.1V	2.1V	0V
Q114	0V	PS	PS
Q115	5.1V	0V	5.1V
Q116	2.1V	2.1V	4.9V
Q501	0V	PS	PS
Q502	0V	PS	PS
Q503	5.2V	PS	PS
Q504	0V	5V	0V
Q505	5.2V	5.1V	0V
Q506	0V	0V	0.6V
Q507	5.8V	13.1V	0V
Q508	5.2V	0V	5.2V
Q509	0V	0.1V	5V
Q510	5.2V	5.1V	4.4V
Q511	−5V	−4.9V	−4.3V
Q512	1.4V	−2.3V	0V
Q513	0V	0V	5V
Q801	13.7V	5.3V	13.3V
Q802	13.7V	0.1V	13.4V
Q803	13.6V	13.6V	0V
Q804	0V	0V	5V

(Measuring Conditions)

1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

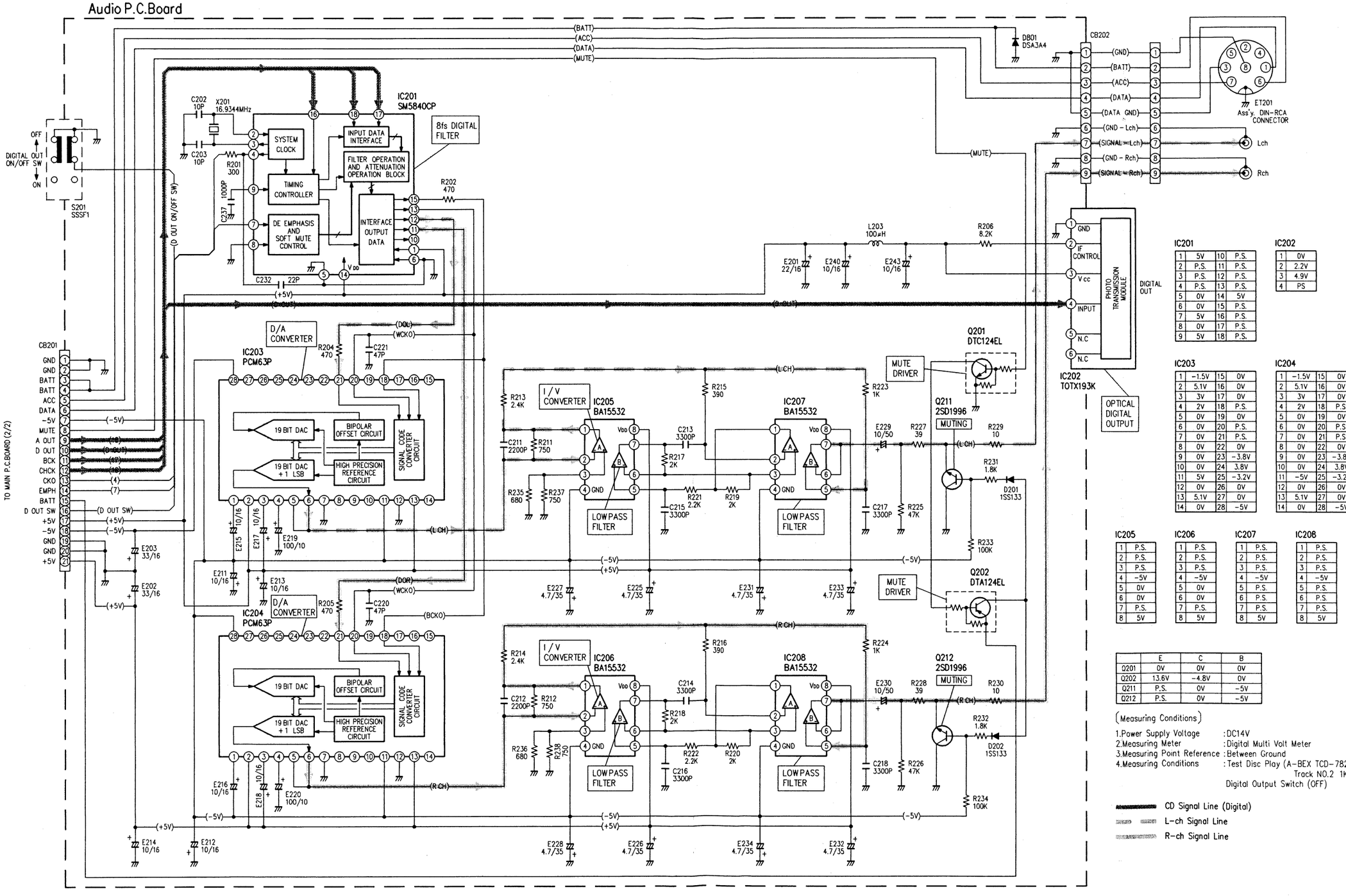
NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (3/3)

IC	IC203 IC204	IC201	IC205 IC206	IC207 IC208	IC202
Transistor(Q)				Q211 Q212	Q201 Q202

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = 1 / 1,000,000



IC201

1	5V	10	P.S.
2	P.S.	11	P.S.
3	P.S.	12	P.S.
4	P.S.	13	P.S.
5	0V	14	5V
6	0V	15	P.S.
7	5V	16	P.S.
8	0V	17	P.S.
9	5V	18	P.S.

IC202

1	0V
2	2.2V
3	4.9V
4	PS

IC203

1	-1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	-3.8V
10	0V	24	3.8V
11	5V	25	-3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	-5V

IC204

1	-1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	-3.8V
10	0V	24	3.8V
11	-5V	25	-3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	-5V

IC205

1	P.S.
2	P.S.
3	P.S.
4	-5V
5	0V
6	0V
7	P.S.
8	5V

IC206

1	P.S.
2	P.S.
3	P.S.
4	-5V
5	0V
6	0V
7	P.S.
8	5V

IC207

1	P.S.
2	P.S.
3	P.S.
4	-5V
5	P.S.
6	P.S.
7	P.S.
8	5V

IC208

1	P.S.
2	P.S.
3	P.S.
4	-5V
5	P.S.
6	P.S.
7	P.S.
8	5V

	E	C	B
Q201	0V	0V	0V
Q202	13.6V	-4.8V	0V
Q211	P.S.	0V	-5V
Q212	P.S.	0V	-5V

(Measuring Conditions)

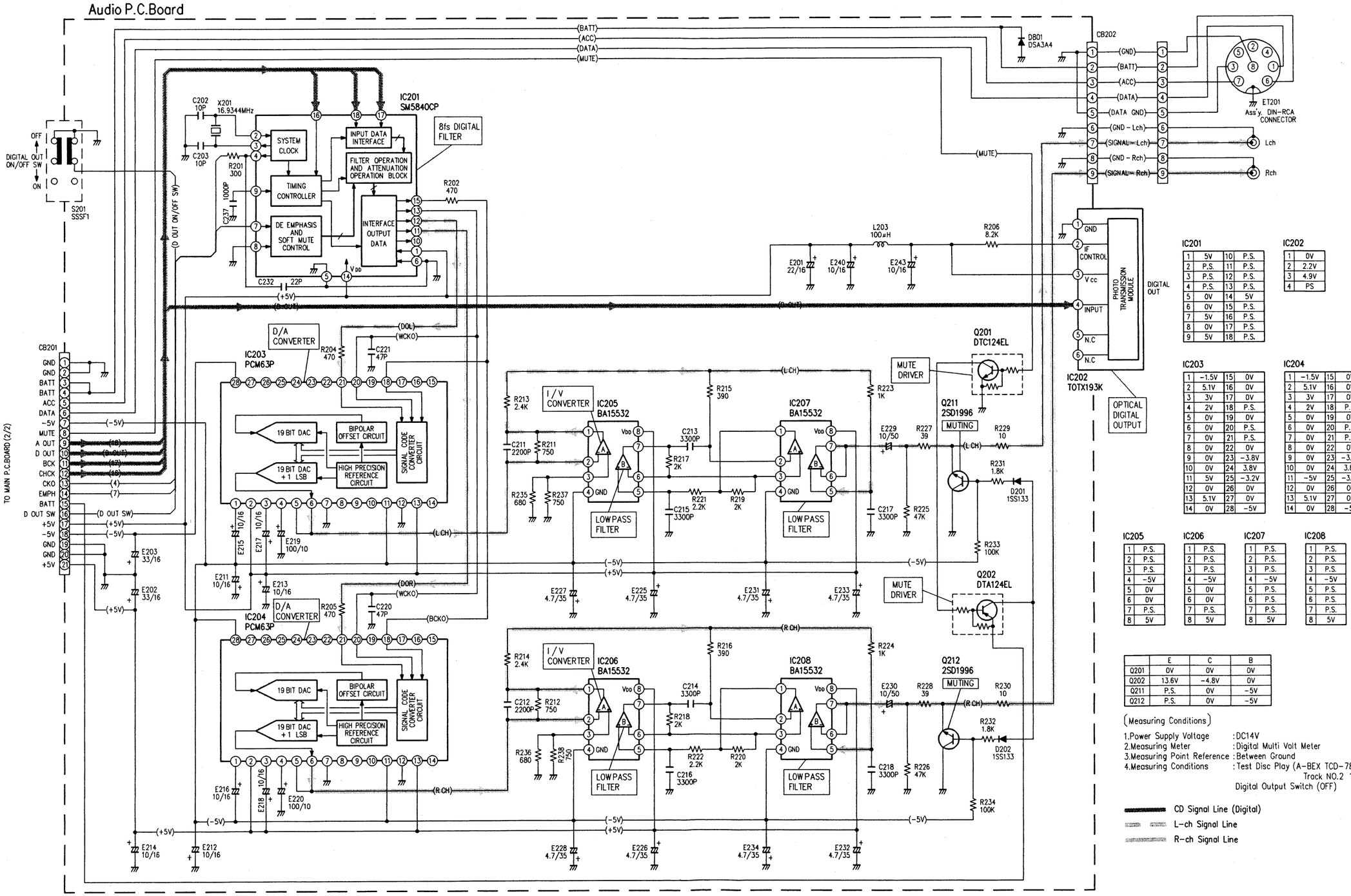
1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

CD Signal Line (Digital)
L-ch Signal Line
R-ch Signal Line

Schematic Diagram (3/3)

IC	IC203 IC204	IC201	IC205 IC206	IC207 IC208	IC202
Transistor(Q)				Q211 Q212	Q201 Q202

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$



IC201

1	5V	10	P.S.
2	P.S.	11	P.S.
3	P.S.	12	P.S.
4	P.S.	13	P.S.
5	0V	14	5V
6	0V	15	P.S.
7	5V	16	P.S.
8	0V	17	P.S.
9	5V	18	P.S.

IC202

1	0V
2	2.2V
3	4.9V
4	PS

IC203

1	-1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	-3.8V
10	0V	24	3.8V
11	5V	25	-3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	-5V

IC204

1	-1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	-3.8V
10	0V	24	3.8V
11	-5V	25	-3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	-5V

IC205

1	P.S.	5	0V
2	P.S.	6	0V
3	P.S.	7	P.S.
4	-5V	8	5V

IC206

1	P.S.	5	0V
2	P.S.	6	0V
3	P.S.	7	P.S.
4	-5V	8	5V

IC207

1	P.S.	5	P.S.
2	P.S.	6	P.S.
3	P.S.	7	P.S.
4	-5V	8	5V

IC208

1	P.S.	5	P.S.
2	P.S.	6	P.S.
3	P.S.	7	P.S.
4	-5V	8	5V

	E	C	B
Q201	0V	0V	0V
Q202	13.6V	-4.8V	0V
Q211	P.S.	0V	-5V
Q212	P.S.	0V	-5V

(Measuring Conditions)

1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

CD Signal Line (Digital)
L-ch Signal Line
R-ch Signal Line

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. =	Resistor	CAP. =	Capacitor
C.F. =	Carbon Film	ELY. =	Electrolytic
M.F. =	Metal Film	CER. =	Ceramic
M.O. =	Metal Oxide Film	MYL. =	Mylar
M.P. =	Metal Plate	TAN. =	Tantalum
TR. =	Transistor	POLY. =	Polystyrol
TRANS. =	Transformer	PP. =	Polypropylene
CP. =	Chip	PLT. =	Polyethylene
		PF. =	Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC101	51T25985W01	TC9236F
IC102	51T25984W01	TA8191F
IC103	51T15264W01	TCA0372M
IC104	51T15264W01	TCA0372M
IC109	51T45285W01	SC7SU04F
IC501	51T35253W02	35253W02
IC502	51T84723F02	LC3516AML
or	51T90640F01	CXK5816M
IC503	51T25370W01	MC14538BFEL
IC504	51T35308W01	M62007FP
IC505	51T90277F10	HD74HC00FP
or	51T25904W03	MC74HC00AFL1
IC506	51T73285F01	BA10393F
IC701	51T15264W01	TCA0372M
IC702	51T15264W01	TCA0372M
IC801	51T35309W01	MB3775

Transistors

Symbol No.	Part No.	Description
Q101	48T62967F03	CP., DTC124K
Q102	48T63420F01	CP., 2SA1037K
Q103	48T80611F01	CP., 2SB1132
Q110	48T62967F02	CP., DTC114K
Q111	48T63417F01	CP., 2SC2412K
Q112	48T62967F09	CP., DTC114TK
Q113	48T62967F09	CP., DTC114TK
Q114	48T62967F03	CP., DTC124K
Q115	48T62966F03	CP., DTA124
Q116	48T62967F03	CP., DTC124K
Q501	48T63417F01	CP., 2SC2412K
Q502	48T62967F04	CP., DTC144K
Q503	48T62966F04	CP., DTA144
Q504	48T62967F03	CP., DTC124K
Q505	48T62966F03	CP., DTA124
Q506	48T63417F01	CP., 2SC2412K
Q507	48T73023F01	2SD874A
Q508	48T62966F03	CP., DTA124
Q509	48T62967F03	CP., DTC124K
Q510	48T80611F01	CP., 2SB1132
Q511	48T80614F01	CP., 2SD1664
Q512	48T62966F03	CP., DTA124
Q513	48T62967F03	CP., DTC124K
Q801	48T15511W02	CP., 2SB1261
Q802	48T15511W02	CP., 2SB1261
Q803	48T62966F03	CP., DTA124
Q804	48T62967F03	CP., DTC124K

Diodes

Symbol No.	Part No.	Description
D103	48T63463F01	CP., DAP202K
D104	48T94608F02	CP., DAP202U
D501	48T63462F01	CP., DAN202K
D502	48T63462F01	CP., DAN202K
D503	48T63462F01	CP., DAN202K
D504	48T63462F01	CP., DAN202K
D505	48T52446F01	CP., MA151WK
D506	48T63462F01	CP., DAN202K
D507	48T63462F01	CP., DAN202K
D802	48T35310W01	CP., FC805
D803	48T52445F01	CP., MA151WA
D804	48T63462F01	CP., DAN202K
ZD501	48T90517F27	Zener, HZS5.6NB2
ZD502	48T62934F25	Zener, CP. RD6.2MB2
ZD503	48T62934F34	Zener, CP. RD8.2MB2

Coils

Symbol No.	Part No.	Description
L801	25T52199F01	Choke
L802	24T16271W13	220μH
L803	24T16271W13	220μH

Thermistor / Crystal

Symbol No.	Part No.	Description
TH501	48T93439F06	Thermistor, 100K ohm
X501	91T15285W01	CER., Lock 4.19MHz

Symbol No.	Part No.	Description
Capacitors		
C101	08S65128F76	CP., 0.1μF
E101	23T25149W13	ELY., 100μF/10V
E102	23T25149W09	ELY., 10μF/16V
E103	23T25149W09	ELY., 10μF/16V
E104	23T74437F32	TAN., 10μF/16V
C105	08S65128F63	CP., 3300pF
E105	23T25149W07	ELY., 3.3μF/50V
C106	08S65128F63	CP., 3300pF
C107	08S65128F35	CP., 100pF
E107	23T74437F32	TAN., 10μF/16V
C108	08S65128F69	CP., 0.01μF
E108	23T25149W12	ELY., 47μF/16V
C109	08S65128F69	CP., 0.01μF
E109	23T25149W12	ELY., 47μF/16V
C110	08S65128F69	CP., 0.01μF
C111	08S65128F57	CP., 1000pF
C113	08T15399W01	CP., 0.022μF
C114	08S65128F64	CP., 3900pF
C115	08T15807W05	CP., 0.1μF
C116	08S65128F43	CP., 220pF
C117	08S65128F62	CP., 2700pF
E117	23T25149W04	ELY., 0.47μF/50V
C118	08T15399W03	CP., 0.047μF
E118	23T74437F32	TAN., 10μF/16V
C119	08S65128F29	CP., 56pF
E119	23T74437F32	TAN., 10μF/16V
C120	08S65128F69	CP., 0.01μF
E120	23T25149W09	ELY., 10μF/16V
C121	08S65128F13	CP., 12pF
E121	23T25149W09	ELY., 10μF/16V
C122	08S53332F47	CP., 0.01μF
C123	08T15807W05	CP., 0.1μF
C124	08S82122F06	CP., 3pF
E125	23T74437F32	TAN., 10μF/16V
C126	08T15807W05	CP., 0.1μF
E126	23T74437F32	TAN., 10μF/16V
C127	08T15807W05	CP., 0.1μF
E127	23T25149W09	ELY., 10μF/16V
E128	23T74437F32	TAN., 10μF/16V
C129	08S65128F69	CP., 0.01μF
C130	08S65128F65	CP., 4700pF
C131	08T15399W03	CP., 0.047μF
C132	08T15399W03	CP., 0.047μF
C140	08S65128F65	CP., 4700pF
C141	08T15807W05	CP., 0.1μF
C142	08S65128F60	CP., 1800pF
C143	08S65128F69	CP., 0.01μF
E150	23T74437F32	TAN., 10μF/16V
C190	08S65128F69	CP., 0.01μF
C191	08S65128F35	CP., 100pF

Symbol No.	Part No.	Description
E502	23T25149W09	ELY., 10μF//16V
E503	23T25149W09	ELY., 10μF/16V
C504	08S53332F57	CP., 0.1μF
E504	23S61523F12	ELY., 10μF/16V
C505	08T15807W01	CP., 0.047μF
C506	08T15807W01	CP., 0.047μF
E506	23T25149W15	ELY., 4.7μF/35V
C507	08S65128F35	CP., 100pF
C508	08S65128F51	CP., 470pF
C509	08T15807W01	CP., 0.047μF
C510	08S65128F49	CP., 390pF
E510	23T25149W12	ELY., 47μF/16V
E511	23T25149W09	ELY., 10μF/16V
C520	08T15807W05	CP., 0.1μF
C521	08T15807W05	CP., 0.1μF
C522	08S65128F69	CP., 0.01μF
C523	08S65128F69	CP., 0.01μF
C524	08S65128F69	CP., 0.01μF
C703	08S65128F69	CP., 0.01μF
C704	08S65128F69	CP., 0.01μF
C801	08S53332F57	CP., 0.1μF
E801	23T25364W01	ELY., 1000μF/16V
C802	08T15399W03	CP., 0.047μF
E802	23T74437F32	TAN., 10μF/16V
C803	08T15399W03	CP., 0.047μF
E803	23S16086W01	ELY., 220μF/10V
E804	23S16086W01	ELY., 220μF/10V
C805	08S65128F56	CP., 820pF
E805	23S16086W02	ELY., 330μF/6.3V
C806	08T15807W05	CP., 0.1μF
E806	23S16086W02	ELY., 330μF/6.3V
C807	08S53332F57	CP., 0.1μF
E807	23S25149W09	ELY., 10μF/16V
C808	08S65128F76	CP., 0.1μF
E808	23S16086W02	ELY., 330μF/6.3V
E810	23S16086W02	ELY., 330μF/6.3V
E811	23S16086W02	ELY., 330μF/6.3V
C530	08S65128F76	CP., 0.1μF

Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R101	06S64995F73	6.8K ohm
R102	06S64996F18	470K ohm
R103	06S64995F39	270 ohm
R105	06S64995F89	33K ohm
R106	06S64995F85	22K ohm
R107	06S64996F10	220K ohm
R108	06S64996F02	100K ohm
R109	06S64995F83	18K ohm
R110	06S64995F57	1.5K ohm
R111	06S64995F83	18K ohm

Symbol No.	Part No.	Description
R112	06S64995F91	39K ohm
R113	06S64995F53	1K ohm
R114	06S64996F10	220K ohm
R115	06S64995F77	10K ohm
R116	06S64995F93	47K ohm
R117	06S64996F30	2.2M ohm
R118	06S64995F89	33K ohm
R119	06S64995F95	56K ohm
R120	06S64995F77	10K ohm
R121	06S64995F87	27K ohm
R122	06S64995F63	2.7K ohm
R123	06S64996F12	270K ohm
R124	06S64995F83	18K ohm
R125	06S64996F02	100K ohm
R126	06S64995F77	10K ohm
R127	06S64996F04	120K ohm
R128	06S64996F02	100K ohm
R129	06S64995F81	15K ohm
R130	06S64995F85	22K ohm
R131	06S64995F77	10K ohm
R132	06S64995F77	10K ohm
R133	06S64995F77	10K ohm
R134	06S64996F20	560K ohm
R135	06S64996F02	100K ohm
R136	06S64995F61	2.2K ohm
R137	06S64995F77	10K ohm
R138	06S64995F69	4.7K ohm
R139	06S64995F69	4.7K ohm
R140	06S64995F69	4.7K ohm
R141	06T70072F05	10 ohm 1/4W
R144	06S64995F53	1K ohm
R145	06S64995F47	560 ohm
R146	06S64995F81	15K ohm
R147	06S64995F97	68K ohm
R148	06S64995F85	22K ohm
R149	06S64995F77	10K ohm
R150	06S64995F77	10K ohm
R151	06S64995F85	22K ohm
R152	06S64995F85	22K ohm
R153	06S64995F77	10K ohm
R154	06S64995F77	10K ohm
R155	06S64995F85	22K ohm
R156	06S64995F85	22K ohm
R157	06S64995F77	10K ohm
R158	06S64995F77	10K ohm
R159	06S64995F85	22K ohm
R160	06S64995F85	22K ohm
R161	06S64995F77	10K ohm
R162	06S64995F77	10K ohm
R163	06S64995F85	22K ohm
R166	06T70072F05	10 ohm 1/4W
R167	06S64996F04	120K ohm

Symbol No.	Part No.	Description
R168	06T70072F05	10 ohm 1/4W
R179	06S64995F63	2.7K ohm
R180	06S64995F77	10K ohm
R181	06S64996F02	100K ohm
R183	06S64996F10	220K ohm
R185	06S64995F83	18K ohm
R186	06S64995F53	1K ohm
R187	06S64995F53	1K ohm
R188	06S64995F65	3.3K ohm
R189	06S64996F18	470K ohm
R190	06S64995F93	47K ohm
R191	06S64995F85	22K ohm
R192	06S64995F77	10K ohm
R194	06S64995F53	1K ohm
R195	06S64995F53	1K ohm
R196	06S64995F53	1K ohm
R197	06S64995F45	470 ohm
R198	06S64996F14	330K ohm
R501	06S64995F37	220 ohm
R502	06S64995F53	1K ohm
R503	06S64996F02	100K ohm
R504	06S64995F89	33K ohm
R505	06S64995F93	47K ohm
R506	06S64995F35	180 ohm
R507	06S64995F93	47K ohm
R508	06S64995F93	47K ohm
R509	06S64995F89	33K ohm
R510	06S64995F45	470 ohm
R511	06S64995F89	33K ohm
R512	06S64995F93	47K ohm
R513	06S64995F79	12K ohm
R514	06S64996F26	1M ohm
R515	06S64996F02	100K ohm
R516	06S64996F02	100K ohm
R517	06S64996F10	220K ohm
R518	06S64996F02	100K ohm
R519	06S64995F93	47K ohm
R520	06S64995F93	47K ohm
R521	06S64995F93	47K ohm
R522	06S64995F93	47K ohm
R523	06S64995F93	47K ohm
R524	06S64995F93	47K ohm
R525	06S64995F93	47K ohm
R526	06S64995F93	47K ohm
R527	06S64996F22	680K ohm
R528	06S64996F26	1M ohm
R529	06S64996F18	470K ohm
R530	06S64995F77	10K ohm
R531	06S64995F83	18K ohm
R532	06S64995F77	10K ohm
R533	06S64995F85	22K ohm
R535	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R536	06S64995F93	47K ohm
R537	06T70072F65	3.3K ohm 1/4W
R538	06S64995F53	1K ohm
R539	06S64996F18	470K ohm
R540	06S64995F53	1K ohm
R541	06S64995F93	47K ohm
R542	06S64995F85	22K ohm
R543	06S64995F93	47K ohm
R550	06S64995F69	4.7K ohm
R551	06S64995F93	47K ohm
R560	06S64995F89	33K ohm
R561	06S64995F77	10K ohm
R562	06T70072F53	1K ohm 1/4W
R563	06S64995F59	1.8K ohm
R570	06T70072F45	470 ohm 1/4W
R571	06S64995F77	10K ohm
R572	06T70072F37	220 ohm 1/4W
R580	06S64995F77	10K ohm
R581	06S64995F77	10K ohm
R582	06S64995F61	2.2K ohm
R583	06S64995F63	2.7K ohm
R584	06S64995F63	2.7K ohm
R590	06S64996F40	2.2 ohm
R591	06S64996F40	2.2 ohm
R595	06S64995F49	680 ohm
R701	06S64995F75	8.2K ohm
R702	06S64995F77	10K ohm
R703	06S64995F77	10K ohm
R704	06S64995F75	8.2K ohm
R705	06S64995F77	10K ohm
R706	06S64995F77	10K ohm
R707	06S64995F75	8.2K ohm
R709	06S64995F77	10K ohm
R710	06S64995F77	10K ohm
R711	06S64995F75	8.2K ohm
R713	06S64995F77	10K ohm
R714	06S64995F77	10K ohm
R801	06S64995F89	33K ohm
R802	06S64995F53	1K ohm
R803	06S64995F67	3.9K ohm
R804	06S64995F89	33K ohm
R805	06S64995F77	10K ohm
R806	06T70072F41	330 ohm 1/4W
R807	06T70072F45	470 ohm 1/4W
R808	06T70072F45	470 ohm 1/4W
R809	06T70072F41	330 ohm 1/4W
R810	06S64995F58	1.6K ohm
R811	06S64995F69	4.7K ohm
R812	06S64995F01	4.7 ohm
R815	06S64995F77	10K ohm
R820	06T70072F90	1 ohm 1/4W
R821	06T70072F90	1 ohm 1/4W

Symbol No.	Part No.	Description
VR101	18T91059F20	Variable, 150K ohm
VR102	18T94215F14	Variable, 15K ohm
VR103	18T94215F09	Variable, 2.2K ohm

Audio P. C. Board

IC's

IC201	51T35105W01	SM5840CP
IC203	51T35201W01	PCM63P
IC204	51T35201W01	PCM63P
IC205	51T25154W02	BA15532
IC206	51T25154W02	BA15532
IC207	51T25154W02	BA15532
IC208	51T25154W02	BA15532

Transistors

Q201	48T82763F03	DTC124EL
Q202	48T82762F03	DTA124EL
Q211	48T90183F03	2SD1996
Q212	48T90183F03	2SD1996

Diodes

D201	48T68828F01	1SS133
D202	48T68828F01	1SS133
D801	48T68580F02	DSA3A4

Switch

S201	40T25473W02	Slide, SSSF1 (DIGITAL OUT ON/OFF)

Coil / Crystal

L203	24T50508F34	Inductor, 100μH
X201	91T25773W92	Crystal, 16.9344MHz

Capacitors

E201	23T74437F34	TAN.,	22μF / 16V
C202	21C45322G10	CER.,	10pF
E202	23T00181L17	ELY.,	33μF / 16V
C203	21S40655F11	CER.,	10pF

Symbol No.	Part No.	Description
E203	23T00181L17	ELY., 33μF/16V
C211	08T35388W09	TF, 2200pF
E211	23T25149W09	ELY., 10μF/16V
C212	08T35388W09	TF, 2200pF
E212	23T25149W09	ELY., 10μF/16V
C213	08T00152L15	PP., 3300pF
E213	23T25149W09	ELY., 10μF/16V
C214	08T00152L15	PP., 3300pF
E214	23T25149W09	ELY., 10μF/16V
C215	08T00152L15	PP., 3300pF
E215	23T25149W09	ELY., 10μF/16V
C216	08T00152L15	PP., 3300pF
E216	23T25149W09	ELY., 10μF/16V
C217	08T00152L15	PP., 3300pF
E217	23T25149W09	ELY., 10μF/16V
C218	08T00152L15	PP., 3300pF
E218	23T25149W09	ELY., 10μF/16V
E219	23T00181L09	ELY., 100μF/10V
C220	21S40655F19	CER., 47pF
E220	23T00181L09	ELY., 100μF/10V
C221	21S40655F19	CER., 47pF
E225	23T25149W15	ELY., 4.7μF/35V
E226	23T25149W15	ELY., 4.7μF/35V
E227	23T25149W15	ELY., 4.7μF/35V
E228	23T25149W15	ELY., 4.7μF/35V
E229	23T00181L44	ELY., 10μF/50V
E230	23T00181L44	ELY., 10μF/50V
E231	23T25149W15	ELY., 4.7μF/35V
C232	21S40655F15	CER., 22pF
E232	23T25149W15	ELY., 4.7μF/35V
E233	23T25149W15	ELY., 4.7μF/35V
E234	23T25149W15	ELY., 4.7μF/35V
C237	08T52714F01	CER., 1000pF
E240	23T25149W09	ELY., 10μF/16V
E243	23T25149W09	ELY., 10μF/16V

Miscellaneous

BA801	60T91060F01	Battery, LIT. CR2032-HE2
ET201	01T35186W01	Assy., DIN-RCA Connector
HD101	88T15309W01	Pick-Up Unit SF-87.5
IC202	51T45264W01	IC, TOTX193K
LD101	48T16057W01	LED, AN501 (RED)
LD102	48T16057W01	LED, AN501 (RED)
LD103	48T16057W01	LED, AN501 (RED)
M101	59T90879F01	Motor, Load 6V-260mA (LOADING)
M102	59T15716W01	Motor, Load 8V-85mA (ELEVATOR)
M103	59T52973F03	Motor, Servo 6V-210mA (SLED)
PI101	48T15722W01	Interrupter, Photo GP1S51
PT101	48T15938W03	TR., Photo PS5022-B1
PT102	48T15938W03	TR., Photo PS5022-B1
PT103	48T15938W02	TR., Photo PS502
Q1003	48T51089F04	TR., 2SA937
S101	40T10876W02	Switch, Tact SKHLAJ (EJECT)
S102	40T71025F01	Switch, Detector (LOADING)
S103	40T71025F01	Switch, Detector (HOME)
S104	40T71025F01	Switch, Detector (MAGAZINE)
S105	40T71025F01	Switch, Detector (LIMIT)

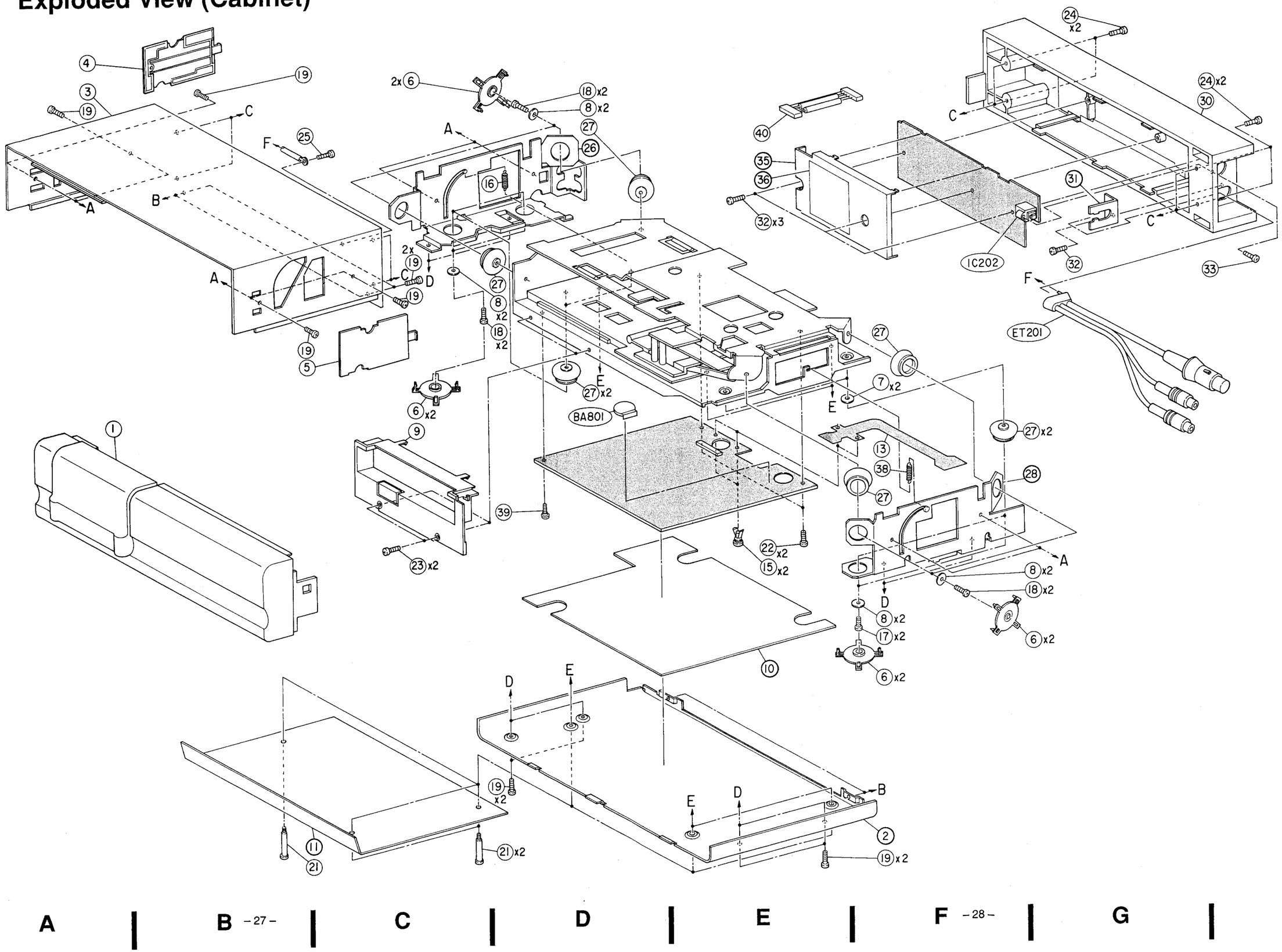
Cabinet Assembly Parts List

Note : The parts without parts list are not supplied.

Symbol No.	Index	Part No.	Description
1	3-A	13T35250W02	Assy., Front Escutcheon
3	1-A	15D41083W01	Cover, Top
4	1-A	15B41292W01	Cover, Plate(L)
5	3-B	15B41293W01	Cover, Plate(R)
6		15B40809W01	Holder, Damper (C)
7	3-F	34A48026W01	Washer, Damper
8		04S40075G60	Washer, Polyslider (M3.2)
9	3-C	64B12370W03	Assy., Plate Inner
13	3-F	84T35118W01	Flexible P.C.Board
15	4-E	05B41635J04	Rivet Push
16	2-C	41A41238W01	Spring, Extension (L)
17	4-F	03A48040W02	Screw, Damper (M2.6×6)
18		03A48040W01	Screw, Damper (M2.6×3)
19		03S38013W12	Screw, Bind (M2.6×4)
21		03A48046W01	Screw, Transport (M4×22.5)
22	4-E	03S44205G64	Screw, Pan (M2.6×6)
23	4-C	03S44205G98	Screw, Pan (M2.6×5)
24	1-G	03S40036U11	Screw, Pan (M3×8)
25	1-C	03S44205G05	Screw, Pan (M3×5)
27		75B48059W01	Damper, DR (D)
30	1-G	15T35177W02	Assy., Cover Rear
32		03S68555F04	Screw, Pan (M2.6×6)
33	2-G	03S70494F10	Screw, Pan (M2.6×10)
38	3-F	41A41238W02	Spring, Extension (R)
39	3-D	03A38056W01	Screw, Special (M2.6×6)
40	1-E	01T45064W01	Assy., Shield Wire

Symbol No.	Index	Part No.	Description

Exploded View (Cabinet)



Packing Assembly Parts List

Symbol No.	Part No.	Description
101	56S41054W30	Carton, Packing (Individual)
102	56D30917W04	Tray, Packing (L)
103	56D30917W03	Tray, Packing (R)
104	01V43800W90	Assy., Kit Installation
105	68P40870W59	Owner's Manual
106	01T45053W01	Assy., DIN Connector (5m)
or	01T15904W02	Assy., DIN Connector (5m)
or	01T15904W01	Assy., DIN Connector (5.5m)
or	01T45150W01	Assy., DIN Connector (5m)
107	28T35041W01	Assy., RCA Cabel (5.5m)
108	56C40990T19	Sack, Polyethylene

Symbol No.	Part No.	Description

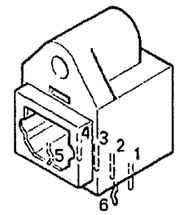
Packing Method View

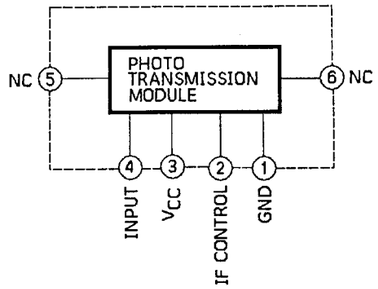
For Packing Method View of this Service Manual, refer to the Service Manual · 5959 (68P32103W02).

Semi-Conductor Lead Identifications

Note : The parts is not mentioned, refer to the Service Manual 5959 (68P32103W02).

TOTX193K : IC202





ALPINE ELECTRONICS INC.
Tokyo Office : 1-1-8 Nishi Gotanda,
Shinagawa-ku, Tokyo, Japan 141
Phone 03-3494-1101 Telex 8927-61

ALPINE ELECTRONICS OF AMERICA, INC.
19145 Gramercy Place
Torrance, California 90501
Phone 310-326-8000

ALPINE ELECTRONICS OF CANADA, INC.
605 Alden RD Markham,
Ontario L3R 3L5 Canada
Phone 416-475-7280 Telex 06-986789

ALPINE ELECTRONICS GmbH
Brandenburger Str. 2-4,
4030 Ratingen F.R. Germany
Phone 001-49-2102-4550 Telex 8589157
Fax 001-49-2102-445321

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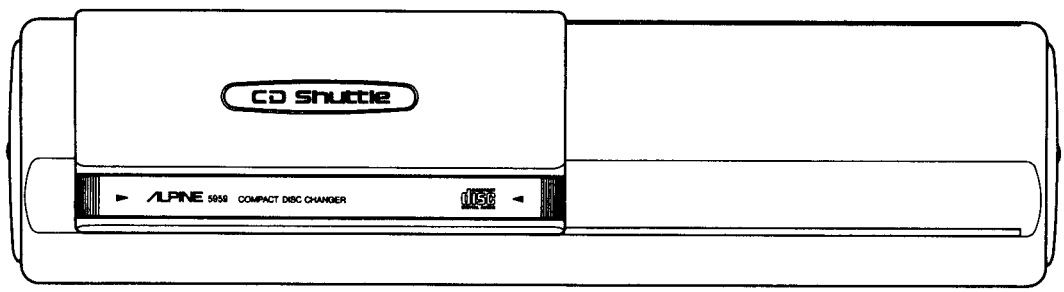
ALPINE SERVICE MANUAL

Compact Disc Remote Changer

CD Shuttle

COMPACT disc DIGITAL AUDIO

● For the CD deck mechanism parts (DR24A01O) of this model, refer to the DR Series · Service Manual (Part No. 68P30571W01).



5959

5959

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Spare Schematic Diagram Inserted.

Specifications

<CD SECTION>

System	Optical (Compact Disc System)
Quantizing Bit Number	20Bit Linear System
Channels	2 Channels, Stereo
Distortion (997Hz)	0.006%
Frequency Response (Ref. 1kHz)	17Hz : 0 ± 1dB
	127Hz : 0 ± 1dB
	10.007kHz : 0 ± 1dB
	19.997kHz : 0 ± 2dB
S/N Ratio	100dB
Separation	997Hz : 90dB
	10.007kHz : 80dB
De-Emphasis (Ref. 1kHz)	- 20 ± 3dB (4kHz)
	- 20 ± 3dB (16kHz)
Currents (at play)	1A

<GENERAL>

Power Supply	14V DC (10.5~16V allowable)
Output Voltage/Impedance	1 ± 0.2V/ 10k ohm
Semiconductors	22 IC's, 25 Transistors, 15 Diodes, 2 Zener Diodes
Dimensions	279 (W) × 71 (H) × 218 (D) mm
Weight	3kg

<COMPACT DISC>

Track Pitch	1.6μm
Modulation Frequency	44.1kHz
Transfer Rate	4.3218Mbit / sec.
Dimensions	120 / 80 × 1.2 mm

NOTE : Due to continuing product improvement, specifications and designs are subject to change without notice.

FEATURES

The 5959 incorporates the latest technology with the following unique functions and features:

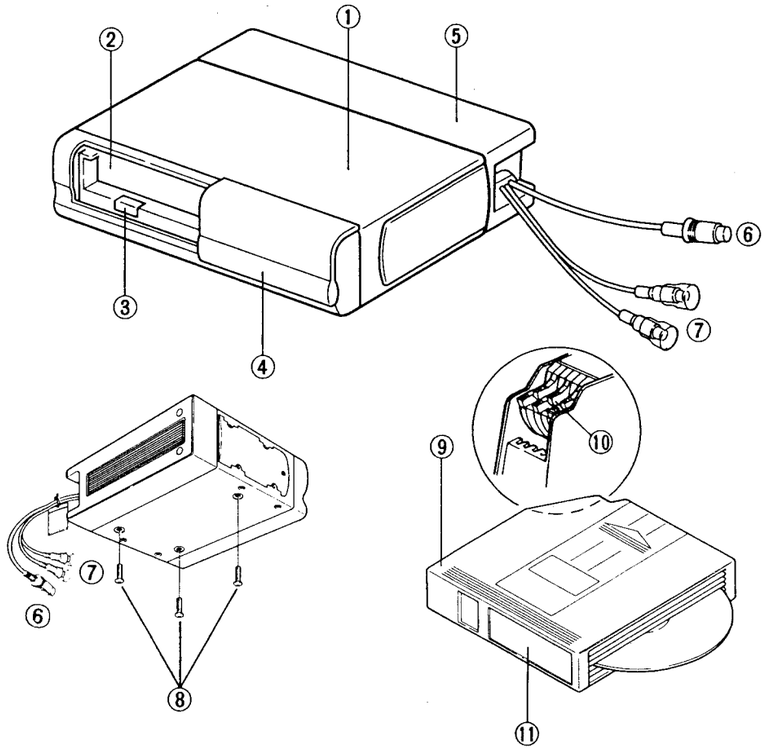
- **CD Shuttle Mounting Versatility**
  The space-saving CD Shuttle can be mounted in a horizontal or vertical position. This allows the installer to choose from a variety of mounting locations including: the trunk, under or behind the seat, or the glove compartment.
- **8X Oversampling**
- **20-bit Sign-Magnitude DAC**
  The Sign-Magnitude method of converting the negative going signals minimizes the zero-cross distortion in the DAC. Using 20-bit technology increases dynamic range and signal-to-noise.
- **High Performance, Dedicated Audio Block**
  By separating the audio section into its own isolated box, we are able to achieve the high level of performance associated with high-grade, home preamplifiers.
- **Interface Options**
  The 5959 CD Shuttle can be used with a 5953 or 5954 controller that allows it to interface with an existing car audio system. It is also fully compatible with Alpine's Shuttle-ready head units with built-in CD changer controls. The 5955 is another controller option which incorporates an FM modulator to allow the CD signal to be played through the FM tuner of an existing system.
- **Magazine Housing 6 CDs**
  Six 5-inch compact discs can be housed in the CD magazine and selected by operating your control unit. You can access any one of the 6 CDs in the magazine quickly and easily for playback of an entire disc or individual selections.

IMPORTANT NOTICE

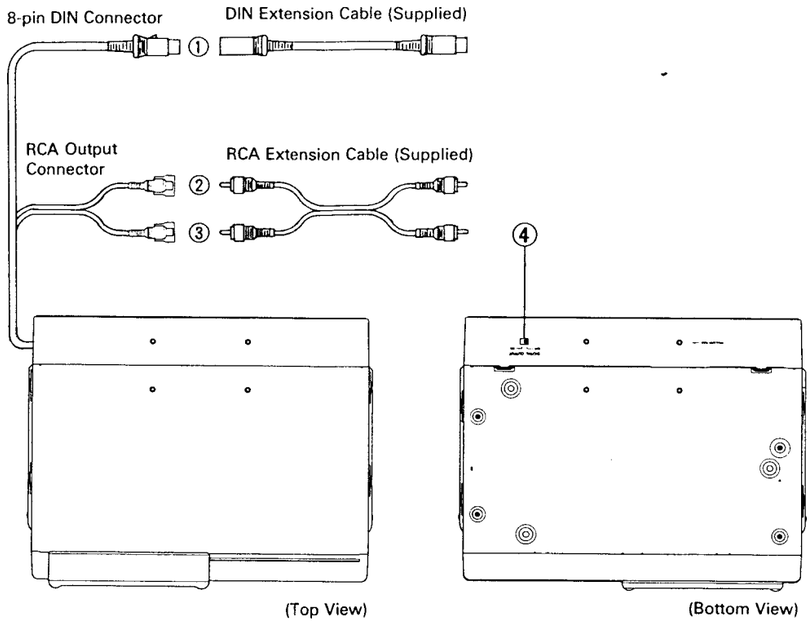
This compact disc Shuttle has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules. This equipment generates and uses radio frequency energy, and it must be installed and used properly in accordance with the manufacturer's instructions.

PARTS IDENTIFICATION

① **CD Shuttle Unit**
② **CD Magazine Insertion Slot**
③ **Eject Button**
Press this button to eject the CD magazine.
④ **CD Magazine Door**
⑤ **Audio Block**
⑥ **8-pin DIN Connector**
⑦ **Audio Connectors (RCA type) for the Right and Left Channels**
⑧ **Shipping Screws**
Must be removed before operating the unit.
⑨ **CD Magazine**
6 discs can be housed in this case.
⑩ **Disc Lever**
⑪ **Disc Index Labels**
Put the Index Label on the CD Magazine.



CONNECTIONS



The 5959 CD Shuttle is not equipped with built-in control unit and power amplifier. Consult with your authorized Alpine dealer for connections of your control unit and power amplifier. Refer to the following illustration for connections of the Shuttle.

NOTE:
The 5959 is designed for 12-volt DC negative ground operation so make sure that your vehicle has this system before making electrical connections.

① **8-pin DIN Connector**
Connect this to your control unit or changer control input of your Alpine Shuttle-ready head unit.

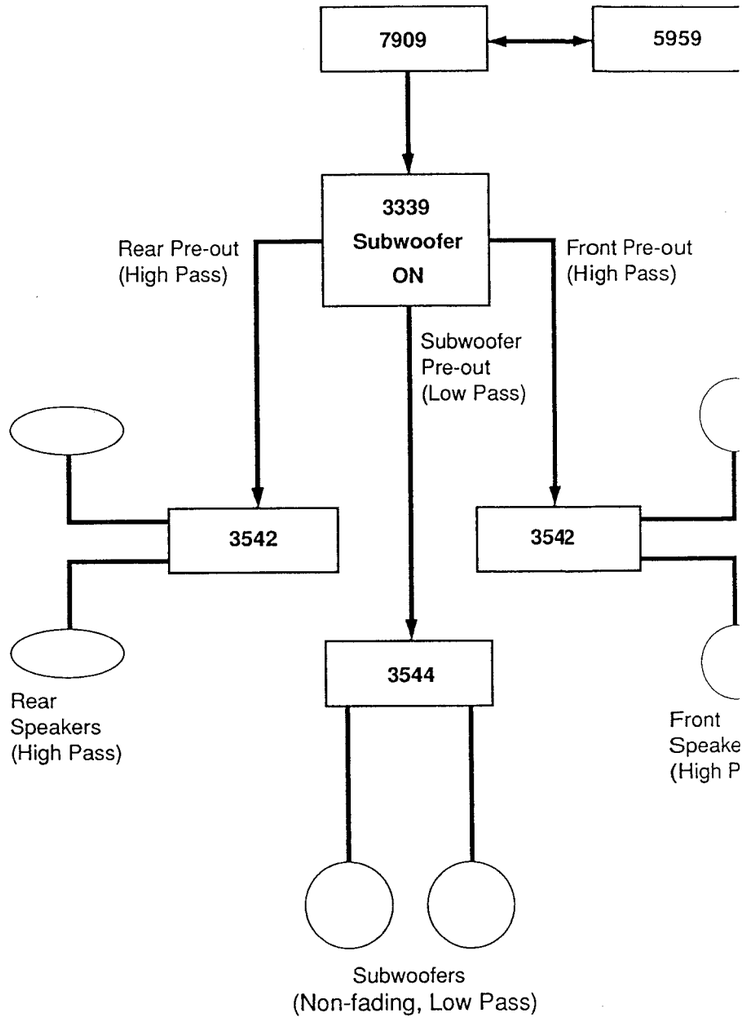
② **Right Channel RCA Output Connector (Red)**
Connect this to the right channel input of your control unit.

③ **Left Channel RCA Output Connector (White)**
Connect this to the left channel input of your control unit.

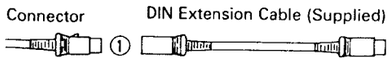
④ **DIGITAL OUTPUT ON/OFF Switch**
Use this switch to turn the digital outputs on and off. Always set to the OFF position when the digital outputs are not being used.

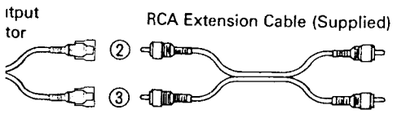
SYSTEM CHARTS

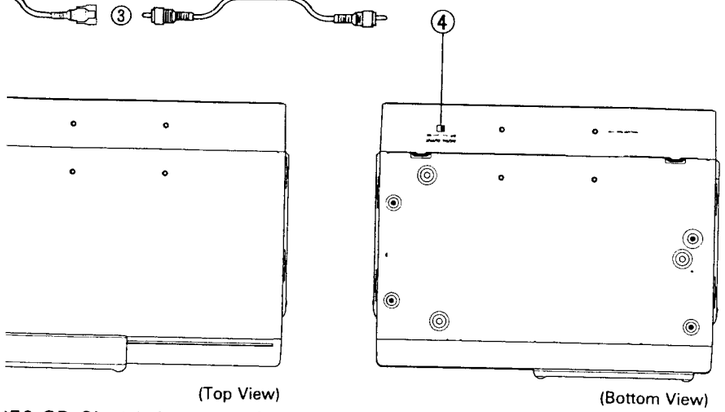
SYSTEM-A



CONNECTIONS







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SYSTEM CHARTS

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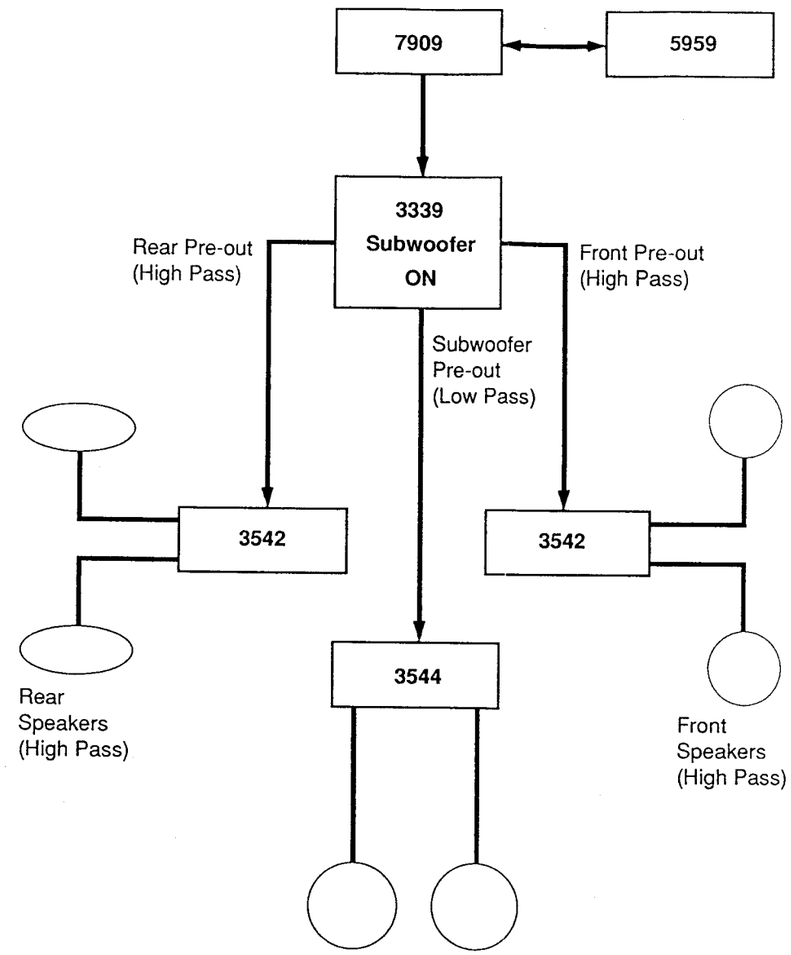
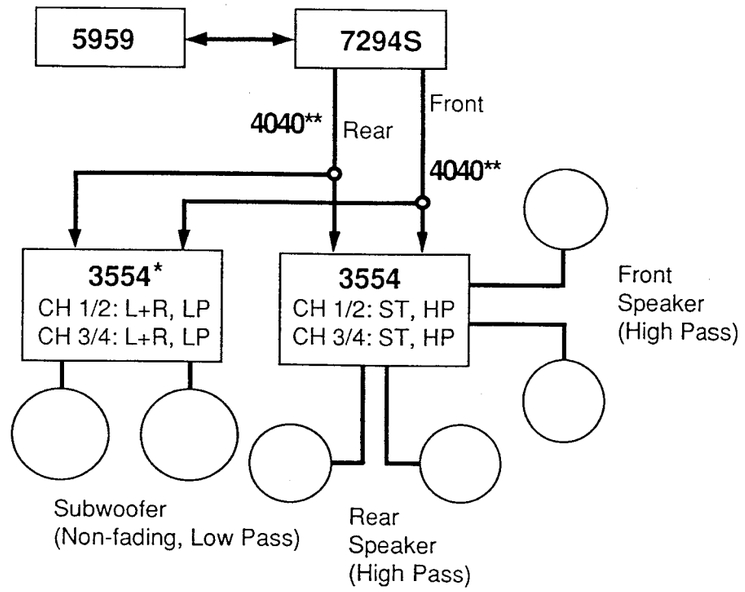


SYSTEM CHARTS

SYSTEM-B



(*) **NOTE:** To achieve a non-fading subwoofer output, connect as follows:
Front Left to CH1, Front Right to CH4, Rear Left to CH3, and Rear Right to CH2.

(**) A total of 4 pieces of the Y-cable are required.

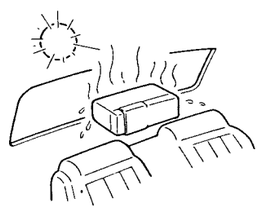
PRECAUTIONS

Do not attempt to repair or service the unit yourself; return the unit to your nearest authorized Alpine Service Station for servicing.

When your car is parked for a long period of time during the summer or winter, the temperature inside the car fluctuates greatly. The temperature inside the vehicle should be between +60°C and −10°C (+140°F and −14°F) when operating the unit.

The 5959 and 5950 are not compatible. That means the controllers and magazines for these units are not interchangeable. Please be sure you have the correct controller for the 5959. If you have any questions, please contact your authorized Alpine dealer.

Never install the Shuttle on the rear or front deck of car as direct sun and high temperature may cause damage to the Shuttle. The Alpine warranty will be voided, should the Shuttle be installed on the rear or front deck of car and damaged.



Cautions during Playback

Playing a disc while driving on a very bumpy road may result in skips but this will not scratch the disc or damage the player.

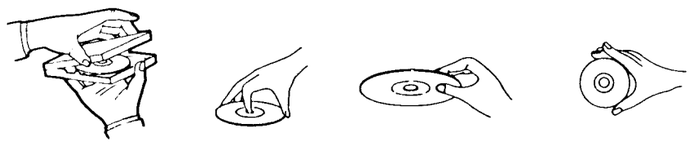
The noise level on compact discs is much lower than on analog-type records or tapes. Therefore, before playing a disc, turn the volume control fully counterclockwise, then adjust volume by gradually turning the control clockwise once playback begins.
Do not turn clockwise too abruptly as this could damage the speakers.

The audio control unit box of the Alpine 5953 or 5954 (sold separately) cannot be mounted on the rear panel of the 5959.

IMPORTANT
Please record the serial number of your unit in the space provided on the back cover of this manual and keep it as a permanent record. The serial number plate is located on the rear of the unit.

PROPER CARE OF YOUR DISC

Proper Handling
Handle your disc as shown. Do not drop the disc while handling. Hold the disc so you will not leave fingerprints on the surface. If the surface is scratched, it may cause the pickup to skip signal tracks. Do not affix tape, paper, or gummed labels on the disc. Do not write on the disc.



Keep Your Discs Clean
Fingerprints, dust, or soil on the surface could cause the pickup to skip signal tracks. For routine cleaning, wipe the playing surface with a clean, soft cloth from the center of the disc to the outer edge. If the surface is heavily soiled, dampen a clean soft cloth in a solution of mild neutral detergent before cleaning the disc. (Fig. A)

Disc Accessories
Various disc accessories for protecting the surface of the disc and improving sound quality (see Fig. B) are available on the market. However, many of them will increase the thickness and/or diameter of the disc. Using such accessories may place the disc beyond the specified size limitations and cause the changer to malfunction. We recommend that these accessories not be used on discs placed in the 5959.

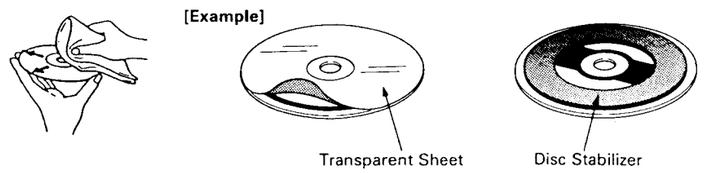


Fig. A

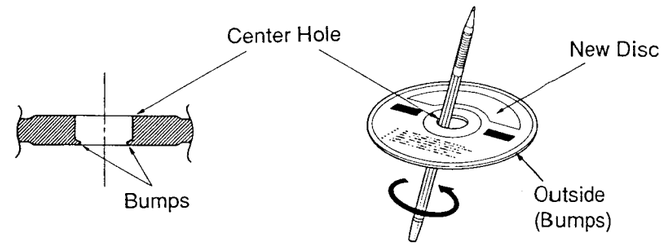
Fig. B

5959

PROPER CARE OF YOUR DISC

Caution for new discs
When a newly purchased disc is inserted into the changer magazine, t
disc may fail to play after initial loading. This is caused by small bumps
around the center hole and outside of the disc, which prevent stable loac
into the correct position.
To remove the bumps, rub the inside edge of the hole and outside edg
the disc with a ball-point pen or other such instrument, then insert the di
again.

NOTE:
The mechanism automatically prevents this type of disc from playing a
protective measure. This is not an indication of faulty operation.



Damaged Disc
Do not attempt to play cracked, warped, or otherwise damaged discs.
Playing a bad disc could severely damage the playback mechanism.

Storage
When not in use, place your discs in their individual cases and store th
a cool place away from the sun, heat, and dust.

PROPER CARE OF YOUR DISC

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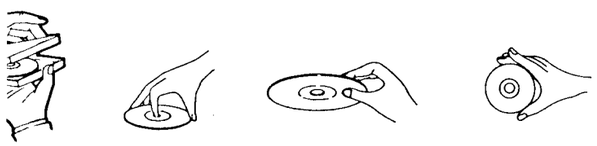

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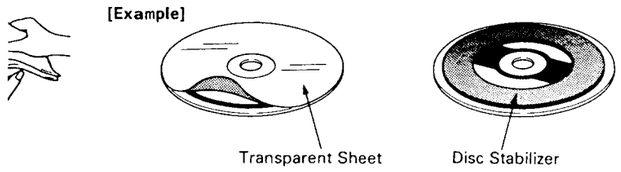


ı. A Fig. B

PROPER CARE OF YOUR DISC

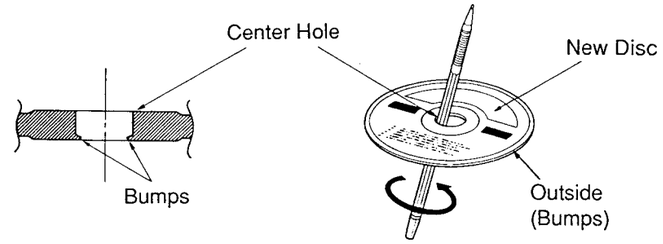
Caution for new discs

When a newly purchased disc is inserted into the changer magazine, the disc may fail to play after initial loading. This is caused by small bumps around the center hole and outside of the disc, which prevent stable loading into the correct position.

To remove the bumps, rub the inside edge of the hole and outside edge of the disc with a ball-point pen or other such instrument, then insert the disc again.

NOTE:

The mechanism automatically prevents this type of disc from playing as a protective measure. This is not an indication of faulty operation.



Damaged Disc

Do not attempt to play cracked, warped, or otherwise damaged discs. Playing a bad disc could severely damage the playback mechanism.

Storage

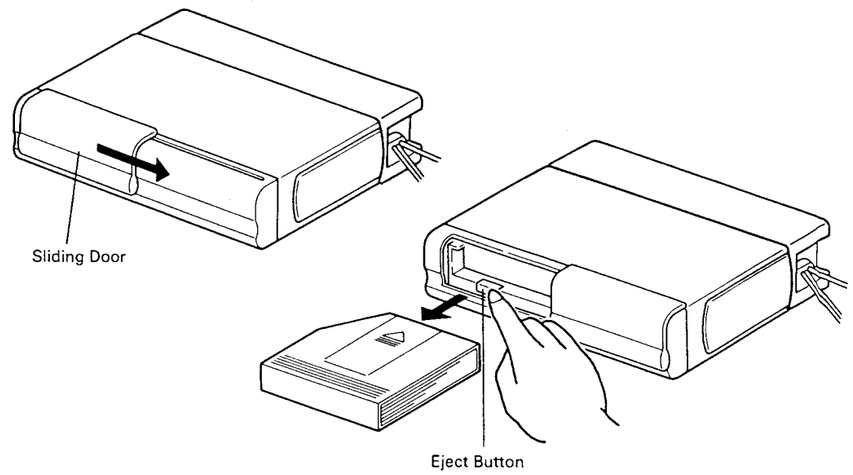
When not in use, place your discs in their individual cases and store them in a cool place away from the sun, heat, and dust.

OPERATION

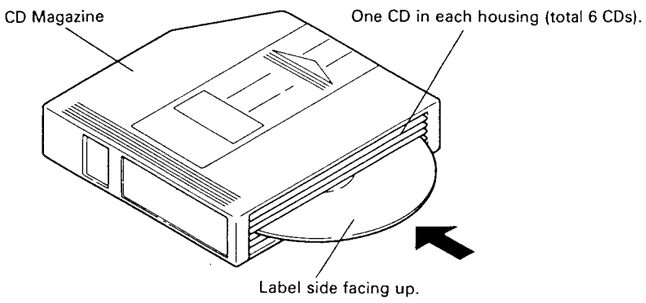
Preparation for Playback

Before operating the unit, follow the procedure below for loading the CD magazine.

1. Slide the door to the right and press the eject button to eject the CD magazine.



2. Insert your discs (up to 6) into the disc slots of the CD magazine with the label side facing up.

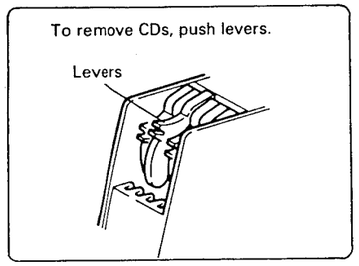


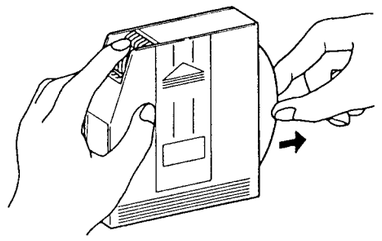
OPERATION

To remove discs already in the CD magazine, push the lever on the CD magazine for the disc you wish to eject. The disc will come halfway out of the magazine. Grasp the edge of the disc with your finger and pull it out.

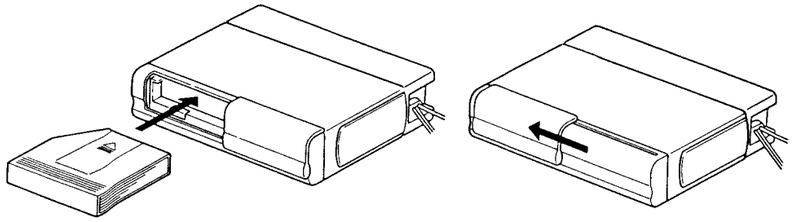
NOTE:

Hold the disc so you will not leave fingerprints on the disc surface (refer to "PROPER CARE OF YOUR DISC" section).





3. Insert the CD magazine all the way into the Shuttle with the narrow side facing the unit as shown here.
4. After inserting the CD magazine, slide the door to the left to close.



NOTES:

1. Do not insert heat-deformed discs into the CD magazine.
2. Do not forcibly remove the CD magazine by hand.
3. Only one disc can be inserted in each housing slot. Attempting to insert another disc may cause damage.
4. Only compact discs containing the mark shown below can be used.

COMPACT disc DIGITAL AUDIO

5. To play 3-inch discs, you must use the (4908) adapter ring.

INSTALLATION

Install the Shuttle in the trunk of the car or another suitable location in the passenger compartment (in the glove box, under the dashboard, etc.) where it will not interfere with your passenger leg room or safe operation of the vehicle.

The 5959 should be mounted to a stable surface (preferably attached to sheet metal). If no stable surface is available, you must build a mounting board for the Shuttle. Choose a location which allows easy access to insert and remove the CD magazine. Determine the mounting location and position (horizontal or vertical). Then have the necessary parts ready before you begin installation.

NOTE:

For the vertical installation be sure to install the Shuttle with the CD magazine slot facing upward.

Before Installation

Refer to the Connections and Operation sections before you proceed with installation.

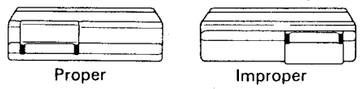
Installation of Shuttle

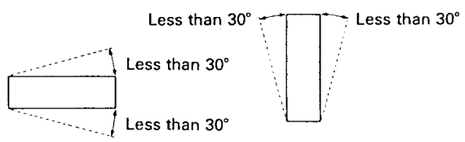
With the 5959, CDs are automatically removed from and reinserted into the CD magazine, so be careful of the following:

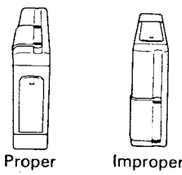
- Do not mount the unit upside down.
- Do not mount the unit at angle of more than 30 degrees off the horizontal or vertical axis.

CAUTION:

Do not install the Shuttle near the vehicle's fuel tank. This will prevent the mounting screws from damaging the tank.

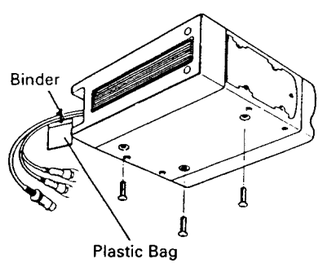






Shipping Screws

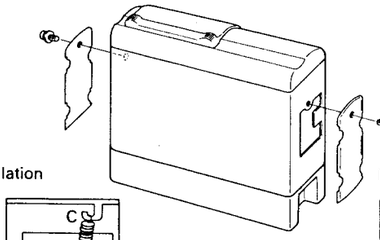
Three screws have been attached to the bottom of the Shuttle for protection during shipment. Remove these screws before using. Keep the removed screws in the plastic bag attached to the connector of Shuttle.

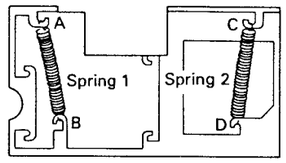


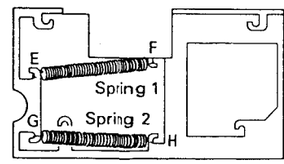
INSTALLATION

Mounting In the Trunk

1. Determine the installation position (horizontal or vertical). Since the Shuttle is pre-set at the factory for horizontal mounting, if you wish to install it vertically, change the spring configuration as shown. This requires removing Spring 1 from A and B and hooking it to points E and F. Remove Spring 2 from points C and D and connect to points G and H. If the spring configuration is incorrect, the shock absorbing mechanism will not function which will prevent the CD Shuttle from operating properly.







2. Use the supplied hexagon washer-head bolts (M4 x 6) to fasten two installation brackets (supplied) to the sides of the CD Shuttle (Fig. 1, Fig. 2).
3. Lift the mat or carpet covering the trunk floor and insert a supporting wooden board (thickness about 10mm) between the trunk floor and the covering mat or carpeting.

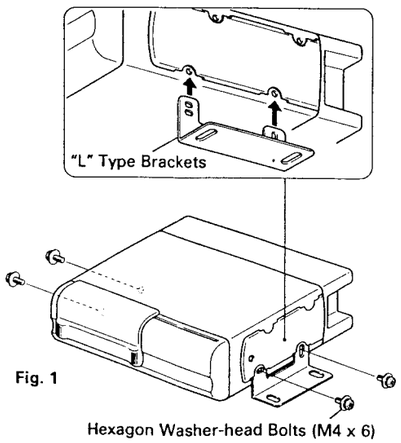


Fig. 1

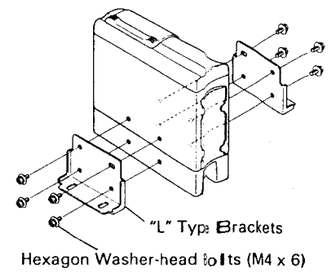


Fig.2

INSTALLATION

the Shuttle in the trunk of the car or another suitable location in the
er compartment (in the glove box, under the dashboard, etc.) where it
nterfere with your passenger leg room or safe operation of the

959 should be mounted to a stable surface (preferably attached to
etal). If no stable surface is available, you must build a mounting
the Shuttle. Choose a location which allows easy access to insert
ove the CD magazine. Determine the mounting location and position
al or vertical). Then have the necessary parts ready before you begin
on.

e vertical installation be sure to install the Shuttle with the CD
e slot facing upward.

nstallation

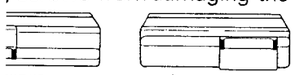
to the Connections and Operation sections before you proceed with
on.

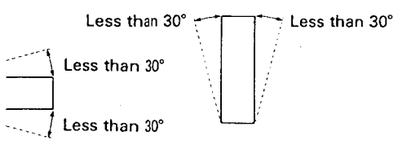
ion of Shuttle

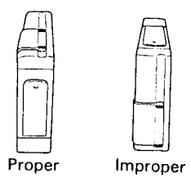
ne 5959, CDs are automatically removed from and reinserted into the
zine, so be careful of the following:
t mount the unit upside down.
t mount the unit at angle of more than 30 degrees off the horizontal
tical axis.

N:

install the Shuttle near the vehicle's fuel tank. This will prevent the
screws from damaging the tank.

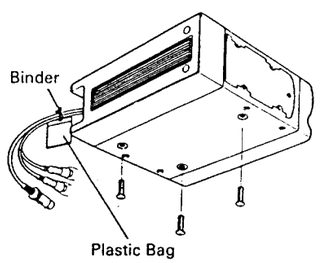






g Screws

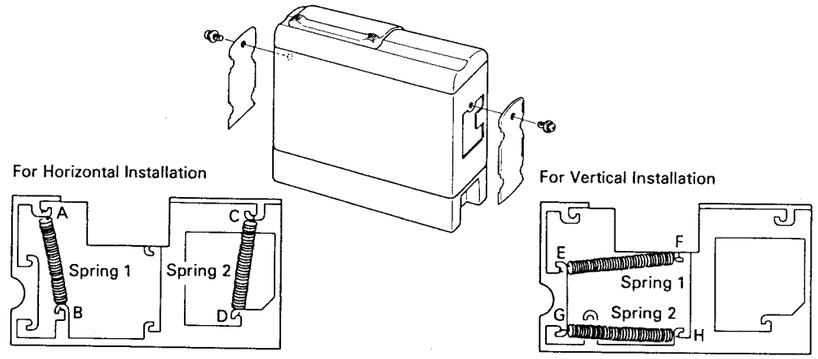
screws have been attached to the
f the Shuttle for protection during
. Remove these screws before
eep the removed screws in the
g attached to the connector of



INSTALLATION

Mounting In the Trunk

1. Determine the installation position (horizontal or vertical). Since the Shuttle is pre-set at the factory for horizontal mounting, if you wish to install it vertically, change the spring configuration as shown. This requires removing Spring 1 from A and B and hooking it to points E and F. Remove Spring 2 from points C and D and connect to points G and H. If the spring configuration is incorrect, the shock absorbing mechanism will not function which will prevent the CD Shuttle from operating properly.



2. Use the supplied hexagon washer-head bolts (M4 x 6) to fasten two installation brackets (supplied) to the sides of the CD Shuttle (Fig. 1, Fig. 2).
3. Lift the mat or carpet covering the trunk floor and insert a supporting wooden board (thickness about 10mm) between the trunk floor and the covering mat or carpeting.

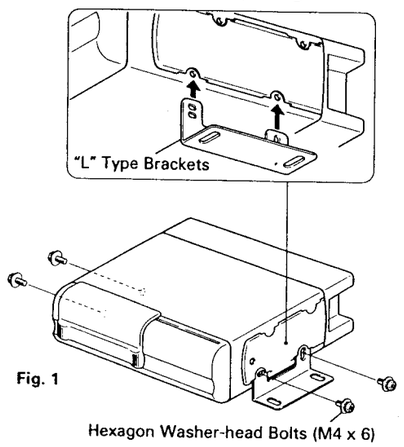


Fig. 1

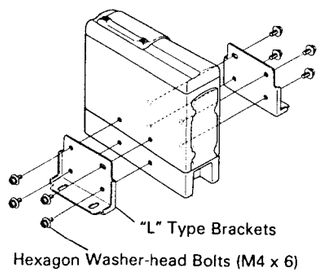
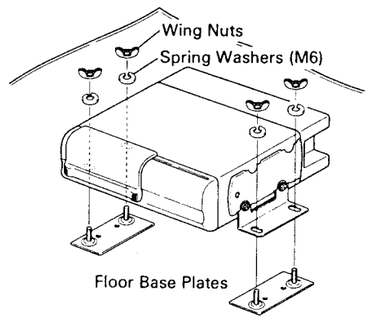


Fig.2

INSTALLATION

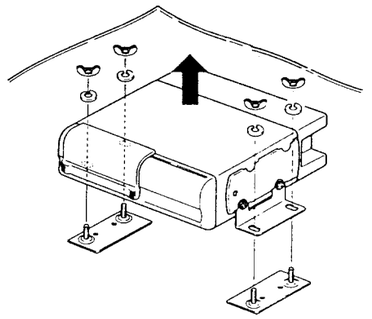
Horizontal Installation Using Floor Base Plates

1



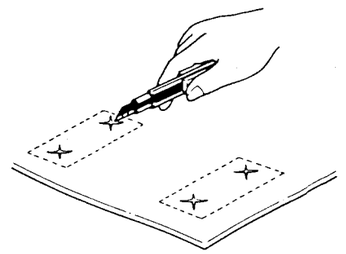
Determine a mounting location by placing the Shuttle under the carpet.

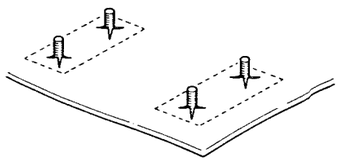
2



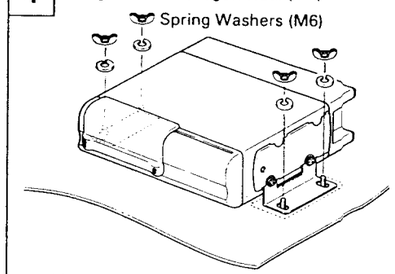
Remove wing nuts and spring washers, then lift the Shuttle up.

3 Cut mat in "+" shape with a knife to allow the threaded shaft of the floor base plate to come through.





4 Wing Nuts or Hexagon Nuts (M6)
Spring Washers (M6)

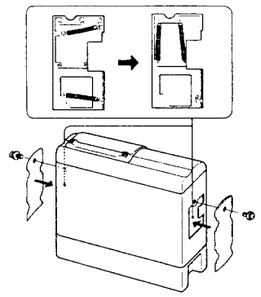


Mount the Shuttle on the carpet with wing nuts (or hexagon nuts if required) and spring washers.

INSTALLATION

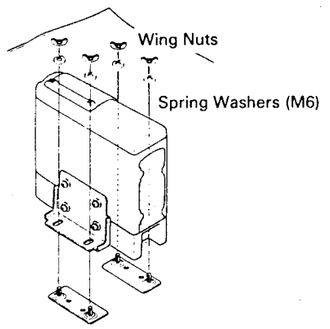
Vertical Installation Using Floor Base Plates

1

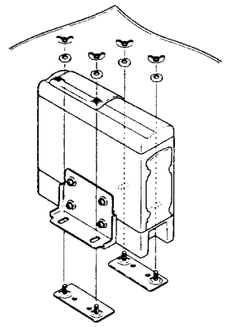


Remove the spring compartment lid by unscrewing one screw on each narrow side of the Shuttle. Change the spring configuration.

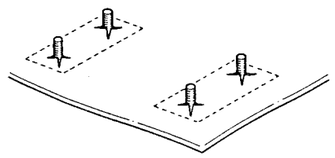
2 Determine a mounting location by placing the Shuttle under the carpet.



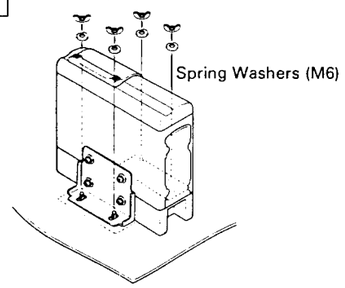
3 Remove wing nuts and spring washers, then lift the Shuttle up.



4 Refer to Fig. 3 on previous page.



5 Wing Nuts (M6) or Hexagon Nuts (M6)



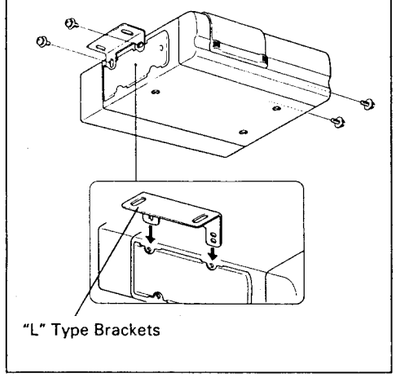
Mount the Shuttle on the carpet with wing nuts (or hexagon nuts if required) and spring washers.

5959

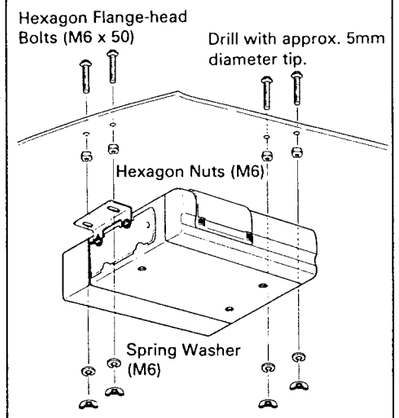
INSTALLATION

Under Rear Deck Installation

1 Insert "L" type brackets into both sides of the Shuttle and fix them using hexagon washer-head bolts.



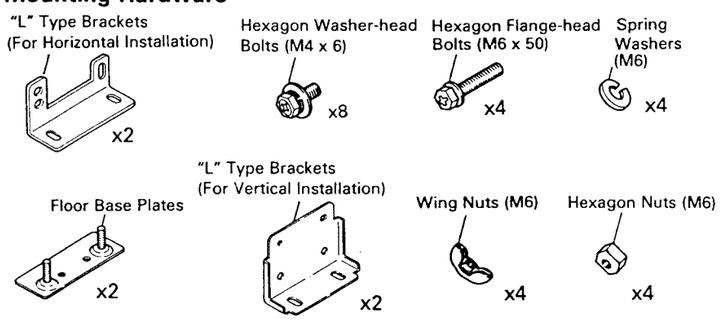
2 Firmly mount brackets with hexagon washer-head bolts, nuts, and wing nuts as shown below.



Glove Compartment Installation:

1. Bend supplied metal mounting strap in "U" shape and secure one end to the mounting holes on Shuttle top with hexagon washer-head bolts (M4 x 6).
2. Place Shuttle in glove compartment and secure Shuttle by fixing the other end of metal mounting strap to glove compartment.
3. Contact your Alpine dealer for further information on the installation in the glove compartment.

Mounting Hardware



5959

Disassem

1. Removal of

(1) Remove four s
(2) Remove Rear
in Figure 1.
Note : Flexible P.C.B
(3) Audio P.C.Boar
(4) Remove Flexib
in Figure 2.
(5) Remove one s

2. Removal of

(1) After removal
"×" and Cove
(2) Remove two s
(3) Front Escutche
Note : Do not remo

3. Removal of

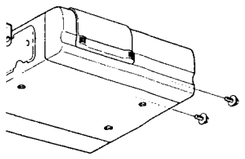
(1) After removal
marked "☆"

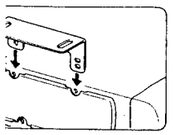
INSTALLATION

Deck Installation

type brackets into both
ne Shuttle and fix them
agon washer-head bolts.

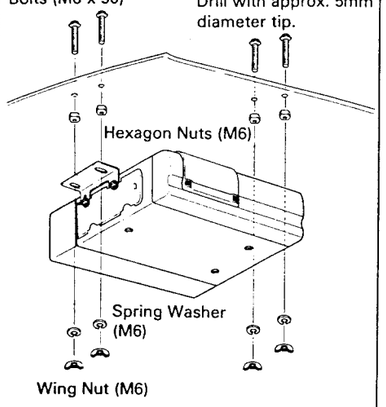
er-head Bolt (M4 x 6)





ets

2 Firmly mount brackets with hexagon washer-head bolts, nuts, and wing nuts as shown below.

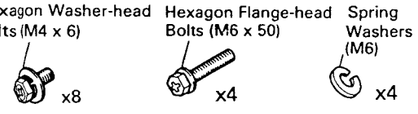


artment Installation:

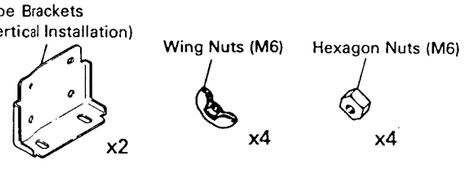
plied metal mounting strap in "U" shape and secure one end to the holes on Shuttle top with hexagon washer-head bolts (M4 x 6).
ttle in glove compartment and secure Shuttle by fixing the other tal mounting strap to glove compartment.
our Alpine dealer for further information on the installation in the partment.

ardware

s
stallation)



Plates



Disassembly Instructions

1. Removal of Rear Cover

(1) Remove four screws marked "○" as shown in Figure 1.
(2) Remove Rear Cover to direction of the arrow as shown in Figure 1.
Note : Flexible P.C.Board pay attention not to give damage.
(3) Audio P.C.Board with Rear Cover can be removed completely.
(4) Remove Flexible P.C.Board from Audio P.C.Board as shown in Figure 2.
(5) Remove one screw marked "△" as shown in Figure 2.

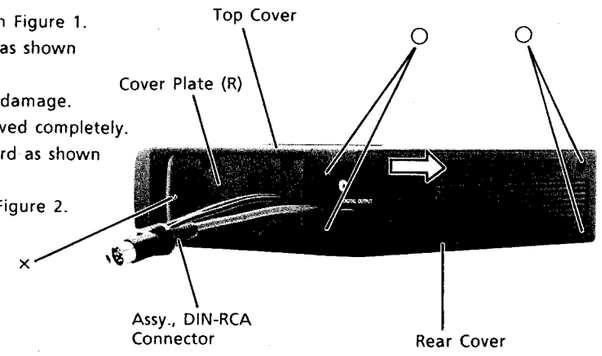


Figure 1

2. Removal of Top Cover

(1) After removal of Rear Cover, remove two screws marked "×" and Cover Plates (L)/(R) as shown in Figures 1, 3.
(2) Remove two screws marked "※" as shown in Figure 4.
(3) Front Escutcheon with Top Cover can be removed completely.
Note : Do not remove Front Escutcheon from Top Cover.

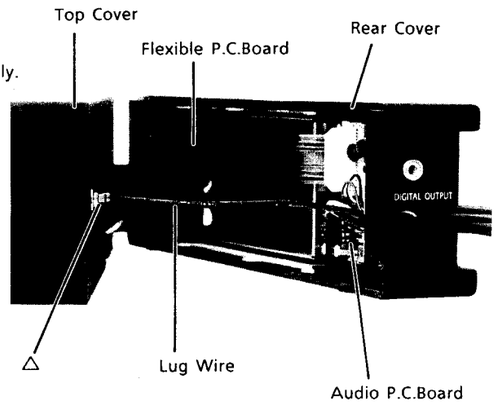


Figure 2

3. Removal of Inner Plate

(1) After removal of Top Cover, remove two screws marked "☆" and Hooks (A) as shown in Figure 5.

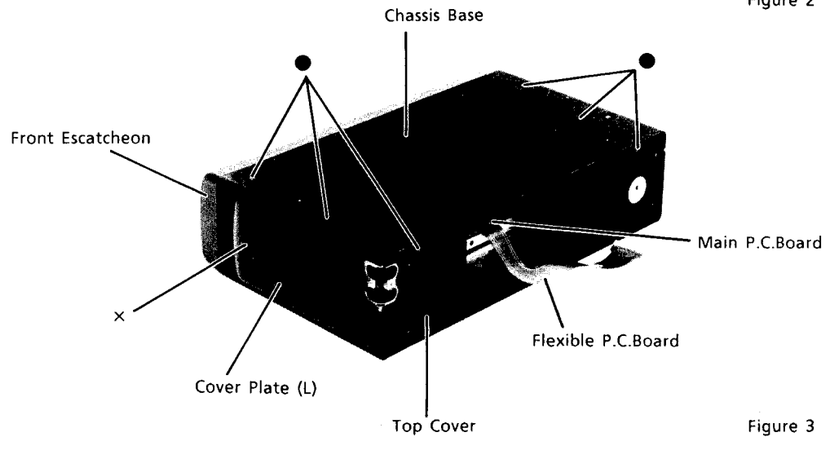


Figure 3

4. Removal of Main P.C.Board

(1) After removal of Inner Plate, remove six screws marked " ● " and Chassis Base as shown in Figure 3.
(2) After removal of Solder (A), remove three screws marked "▲" and Hook (B) as shown in Figure 4.
(3) Remove all the connectors and Flexible P.C.Boards from Main P.C.Board.

Note: Flexible P.C.Board pay attention not to give damage.

(4) Move Main P.C.Board to direction of the arrow, and remove two screws marked " ■ " as shown in Figure 4.

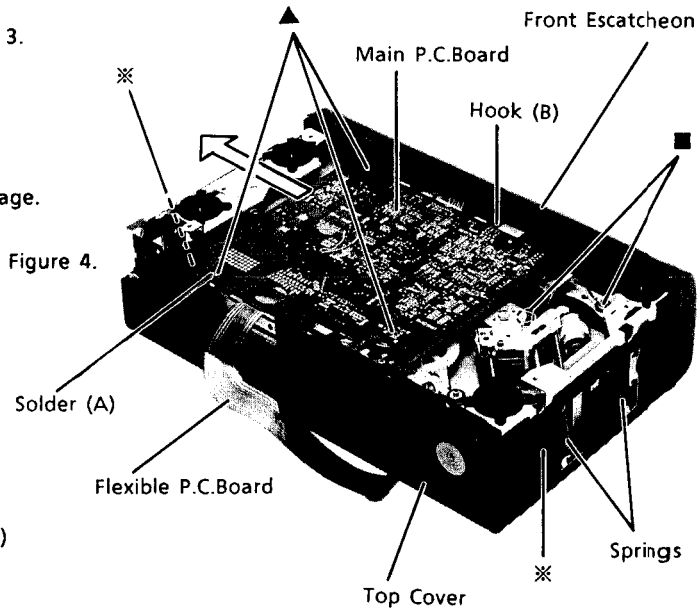


Figure 4

5. Removal of DR Mechanism

(1) After removal of Main P.C.Board, remove Hooks (C) of Damper Holder as shown in Figure 6.

Note: Remove all of eight Damper Holders.

(2) Remove one screw marked "□" of center of Damper and four Springs as shown in Figures 4, 5 and 7.

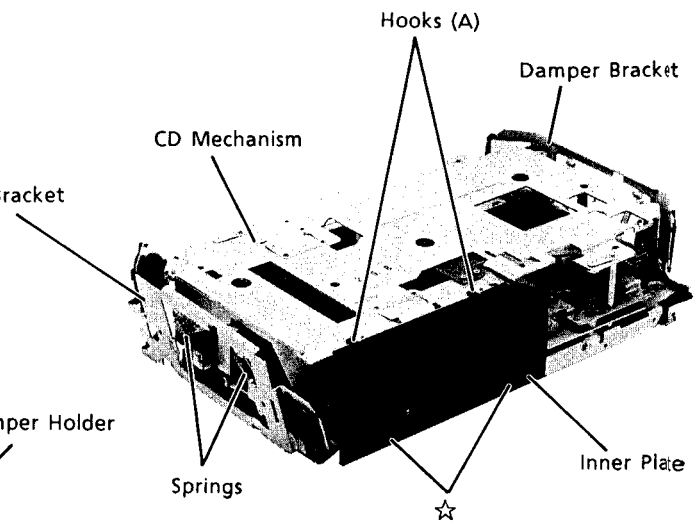


Figure 5

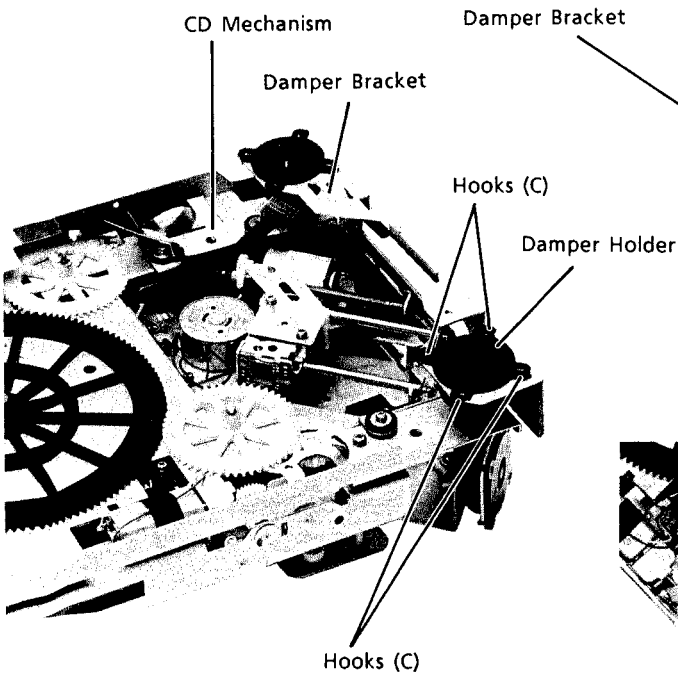


Figure 6

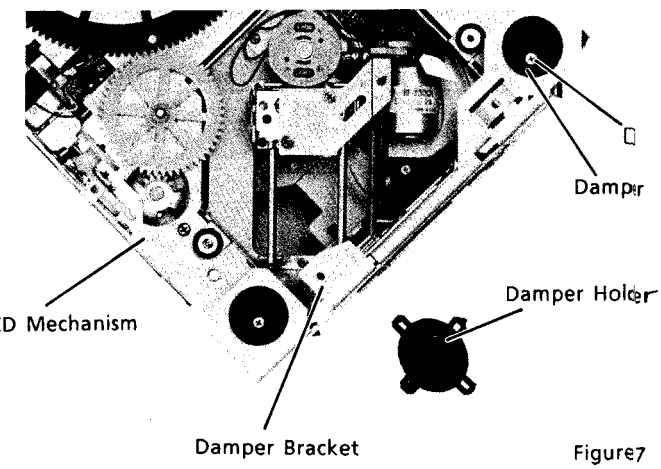


Figure 7

Adjustment Procedures

1. Jitter Adjustment

1-1 Connections

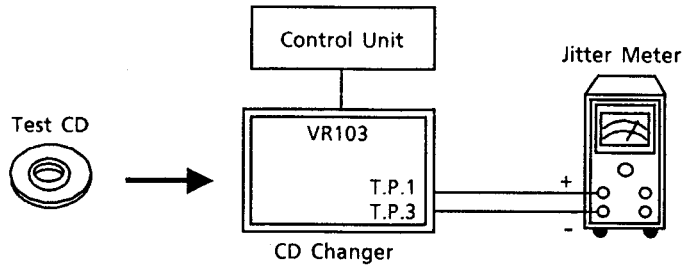


Figure 8

1-2 Preparations

(1) Test CD ..... A-BEX TCD-782 (1 st track)
(2) Power Supply Voltage DC14V

1-3 Switch Settings

(1) Power Switch (Control Unit) ..... ON
(2) Disc Play / Pause Switch (Control Unit) ..... PLAY
(3) Others (Control Unit) ..... OFF

1-4 Adjustment Procedures

(1) Set the mode to playback with the test disc loaded.
(2) Rotate VR103 fully counterclockwise.
(3) Using the Jitter meter, confirm the T.P.1 Signal shows a value.
(4) Carefully rotate VR103 clockwise until the Jitter meter shows a minimum value and then increases by +0.5nS from the minimum value.

2. Tracking Balance Adjustment

2-1 Connections

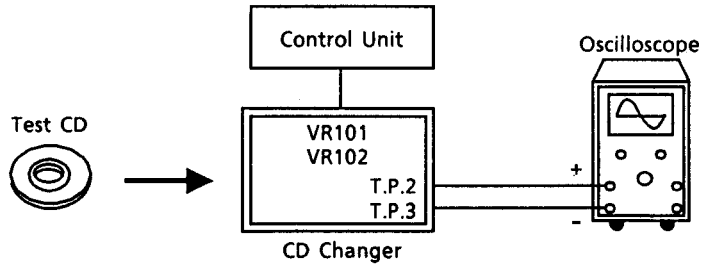


Figure 9

2-2 Preparations

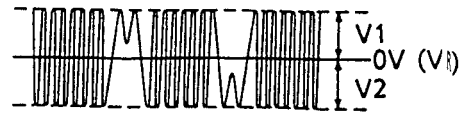
(1) Test CD ..... A-BEX TCD-782 (8 th track)
or SONY YEDS-18 (7th track)
(2) Power Supply Voltage DC14V

2-3 Switch Settings

(1) Power Switch (Control Unit) ..... ON
(2) Disc Play / Pause Switch (Control Unit) ..... PLAY
(3) Others (Control Unit) ..... OFF
(4) RF Control (VR102) ..... Mechanical Center
(First time only)

2-4 Adjustment Procedures

(1) Load the CD magazine in the drive mechanism, select the test CD, and play the no-signal (-∞dB) track.
(2) Connect wires to T.P.3 and T.P.4.
(3) Connect the positive (+) input of the oscilloscope to T.P.2 and the negative (-) input of the oscilloscope to T.P.3.
(4) Observe the T.P.2 signal viewed from VR on the oscilloscope. (VR Reference = 0V)
(5) Adjust VR101 so that the T.P.2 signal level is symmetrical above and below relative to VR (0V). (Whole waveform moves up and down.)
(6) Disconnect the wires previously connected to T.P.3 and T.P.4.



V1 = V2

Figure 10

3. Tracking offset Adjustment

3-1 Connections

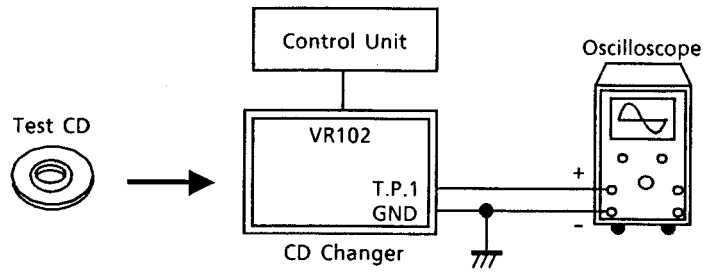


Figure 11

3-2 Preparations

(1) Test CD ..... A-BEX TCD-721 (6 th track)
(2) Power Supply Voltage DC14V

3-3 Switch Settings

(1) Power Switch (Control Unit) ..... ON
(2) Disc Play / Pause Switch (Control Unit) ..... PLAY
(3) Others (Control Unit) ..... OFF

3-4 Adjustment Procedures

(1) Connect the positive (+) input of the oscilloscope to T.P.1 and the negative (-) input of the oscilloscope to GND.
(2) Load the CD magazine in the drive mechanism, select the test CD, and play the track that has 1.2mm-wide scratch.
(3) Observe the T.P.1 signal on the oscilloscope.
(4) Adjust VR102 so that the returning waveform after the T.P.1 signal drop out is minimized as much as possible.
(5) Conduct the tracking balance adjustment once again.

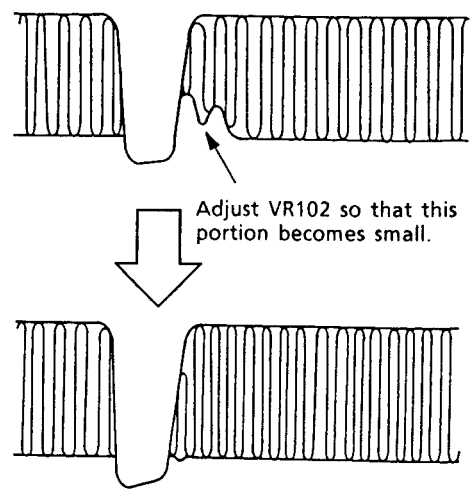


Figure 12

Adjustment Locations

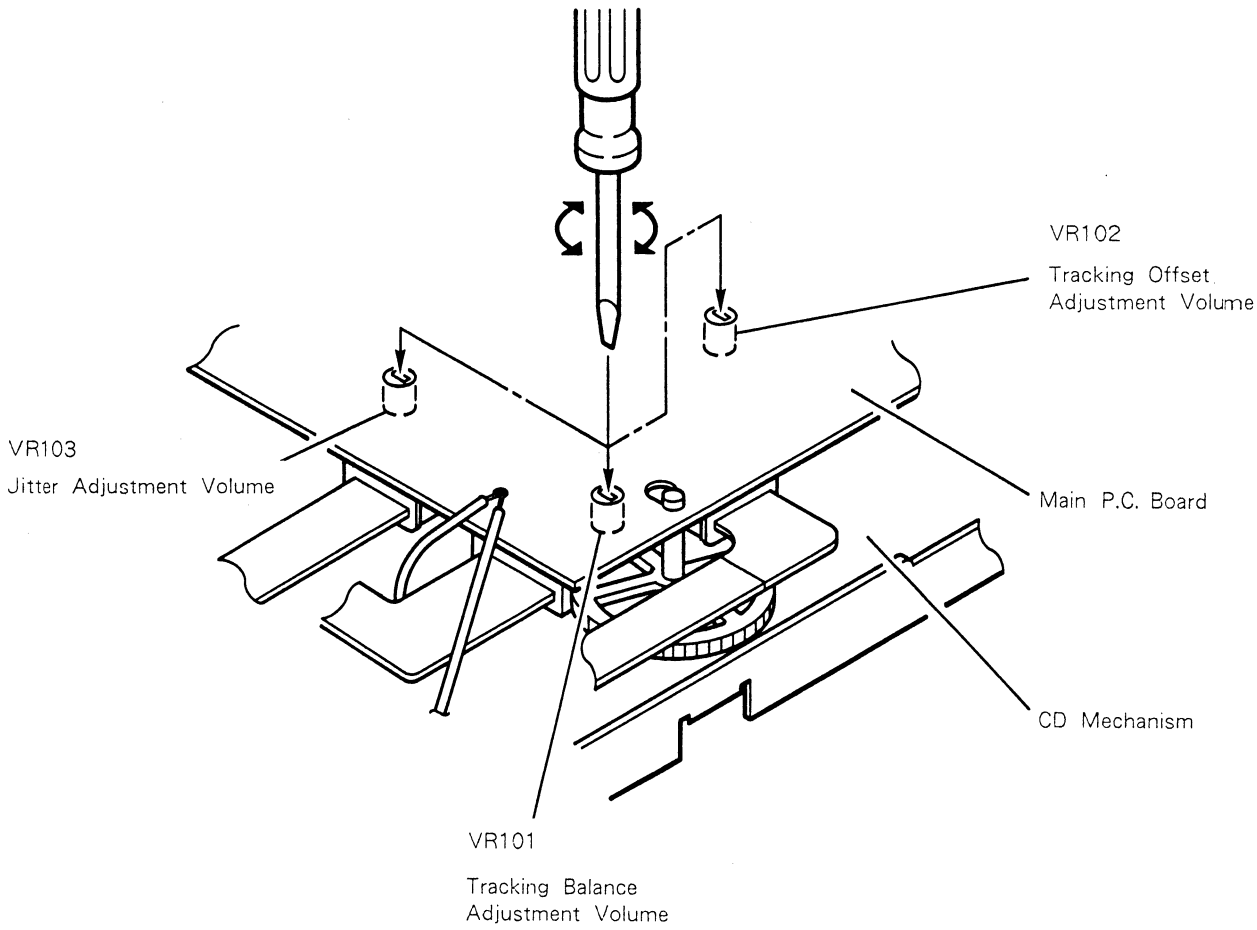
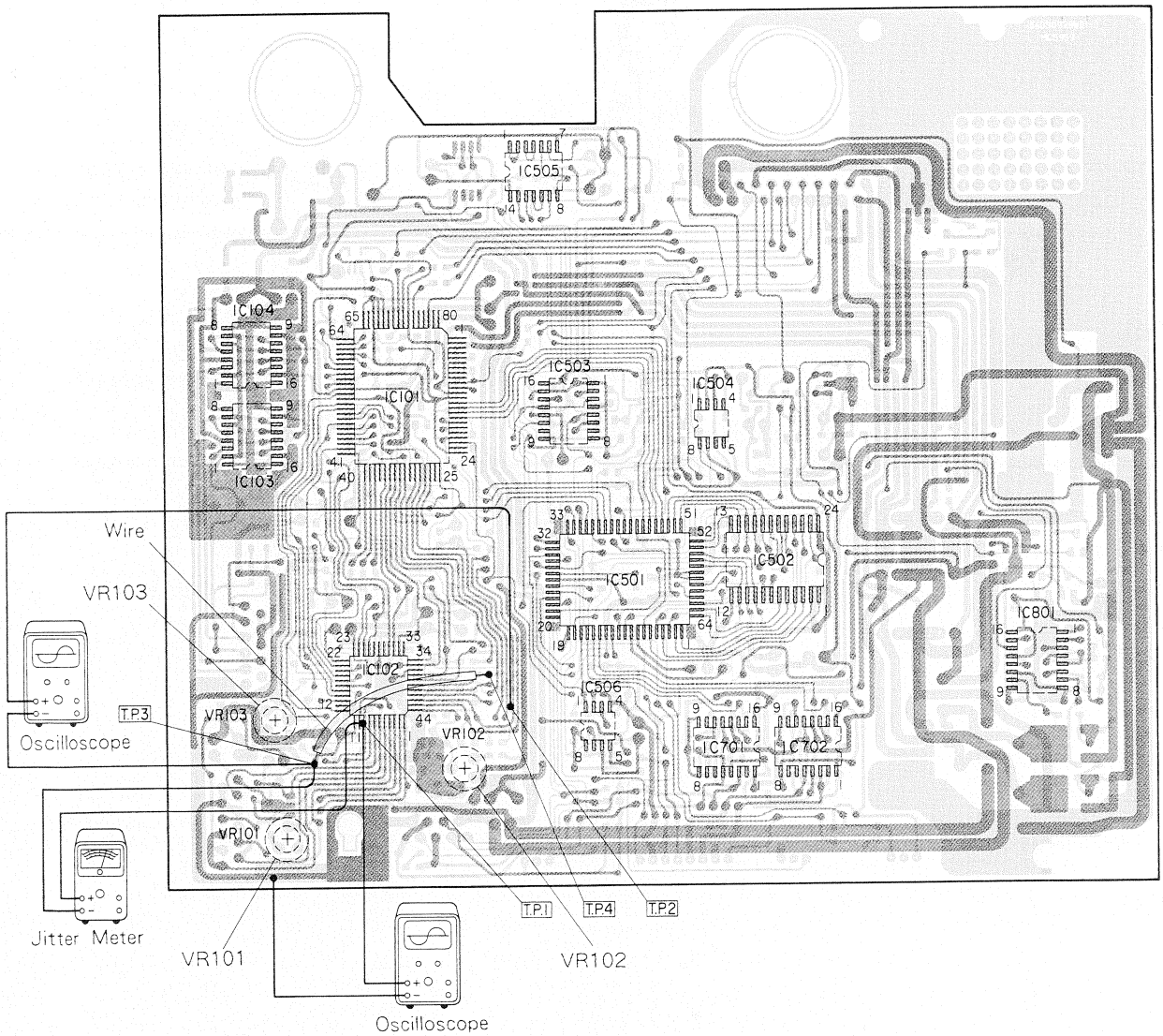


Figure 13



Main P.C. Board (Foil Side)

Description of IC Terminal

35253W01 (IC501)

No.	Symbol	I/O	Terminal Description
1	A5	O	S-RAM (IC502) ADDRESS 5
2	A4	O	S-RAM (IC502) ADDRESS 4
3	A3	O	S-RAM (IC502) ADDRESS 3
4	A2	O	S-RAM (IC502) ADDRESS 2
5	A1	O	S-RAM (IC502) ADDRESS 1
6	A0	O	S-RAM (IC502) ADDRESS 0
7	$\overline{\text{RESET}}$	—	SYSTEM RESET
8	X2	—	SYSTEM CLOCK 2 (4.19MHz)
9	X1	—	SYSTEM CLOCK 1 (4.19MHz)
10	$\overline{\text{WE}}$	O	S-RAM (IC502) $\overline{\text{WE}}$
11	$\overline{\text{OE}}$	O	S-RAM (IC502) OE
12	W OUT	I	WATCH DOG OUTPUT
13	FCONT	O	FOCUS GAIN CONTROL OUTPUT
14	ELV M (+)	O	ELEVATOR MOTOR (+)
15	ELV M (-)	O	ELEVATOR MOTOR (-)
16	LOD M (+)	O	LOADING MOTOR (+)
17	LOD M (-)	O	LOADING MOTOR (-)
18	LSI CONT	O	LSI CONTROL
19	MUTE	O	MUTE OUTPUT
20	NC	—	OPEN
21	VCONT	O	CIRCUMFERENCE LSI REGULATOR CONTROL OUTPUT
22	$\overline{\text{LAPM SW}}$	I	LOADING ARM SW
23	HI TEMP	I	HIGH TEMPARATURE DETECT SENSOR
24	EJE KEY	I	MAGAZINE EJECT KEY
25	IGN SW	I	IGN SW
26	V_{SS}	—	GND
27	STB RELE	I	STANDBY · RELEASE SIGNAL
28	BATT SW	I	BATTERY DETECT SWITCH
29	BUS IN	I	BUS DATA INPUT
30	DISCP	I	DISC POSITION DETECT SENSOR
31	DISCIN	I	DISC DETECT PHOTO SW

No.	Symbol	I/O	Terminal Description
32	LOD SW	I	LOADING END PHOTO SW
33	DISC OK	I	GUILLOTINE DETECT PHOTO SW
34	$\overline{\text{HMP SW}}$	I	HOME POSITION SW
35	$\overline{\text{MAG SW}}$	I	MAGAZINE DETECT SW
36	$\overline{\text{LIM SW}}$	I	INSIDE CIRCUMFERENCE LIMIT SW
37	BUS OUT	O	BUS DATA OUTPUT
38	$\overline{\text{LSI RST}}$	O	CIRCUMFERENCE LSI RESET SIGNAL
39	BUCK	O	TC9236F (IC101) BUS CLOCK
40	CCE	O	TC9236F (IC101) CE
41	LO TEMP	I	LOW TEMPARATURE DETECT SENSOR
42	DOUT SW	I	DIGITAL OUT ON/OFF SW
43	LOCK	—	GND
44	GND	—	GND
45	BUS3	I/O	TC9236F (IC101) BUS DATA 3
46	BUS2	I/O	TC9236F (IC101) BUS DATA 2
47	BUS1	I/O	TC9236F (IC101) BUS DATA 1
48	BUS0	I/O	TC9236F (IC101) BUS DATA 0
49	D8	I/O	S-RAM (IC502) I/O 8
50	D7	I/O	S-RAM (IC502) I/O 7
51	D6	I/O	S-RAM (IC502) I/O 6
52	D5	I/O	S-RAM (IC502) I/O 5
53	D4	I/O	S-RAM (IC502) I/O 4
54	D3	I/O	S-RAM (IC502) I/O 3
55	D2	I/O	S-RAM (IC502) I/O 2
56	D1	I/O	S-RAM (IC502) I/O 1
57	V_{PP}	—	PROM INPUT REGULATOR
58	V_{DD}	—	REGULATOR +5V
59	$\overline{\text{CE}}$	O	S-RAM (IC502) CE
60	A10	O	S-RAM (IC502) ADDRESS 10
61	A9	O	S-RAM (IC502) ADDRESS 9
62	A8	O	S-RAM (IC502) ADDRESS 8
63	A7	O	S-RAM (IC502) ADDRESS 7
64	A6	O	S-RAM (IC502) ADDRESS 6

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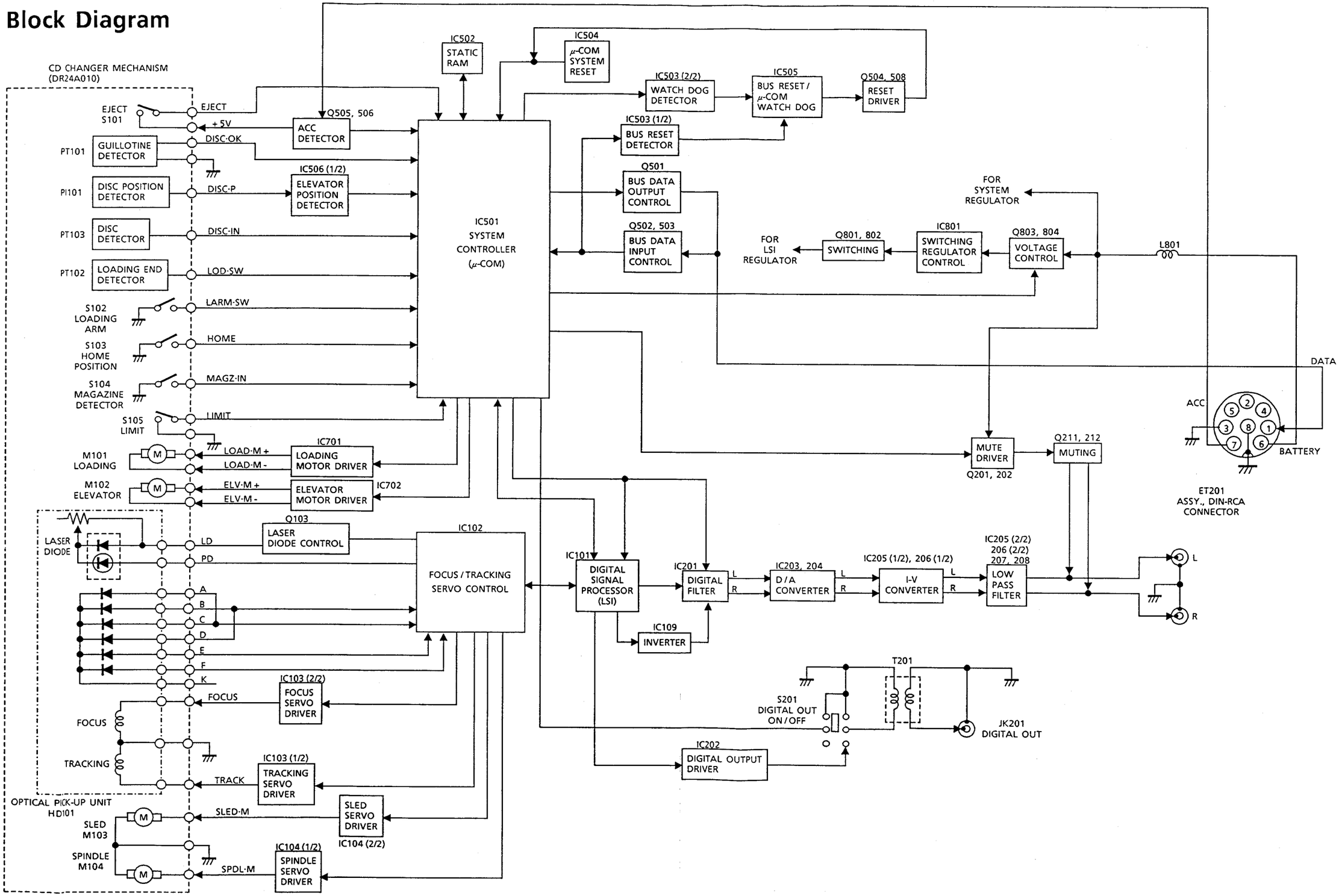
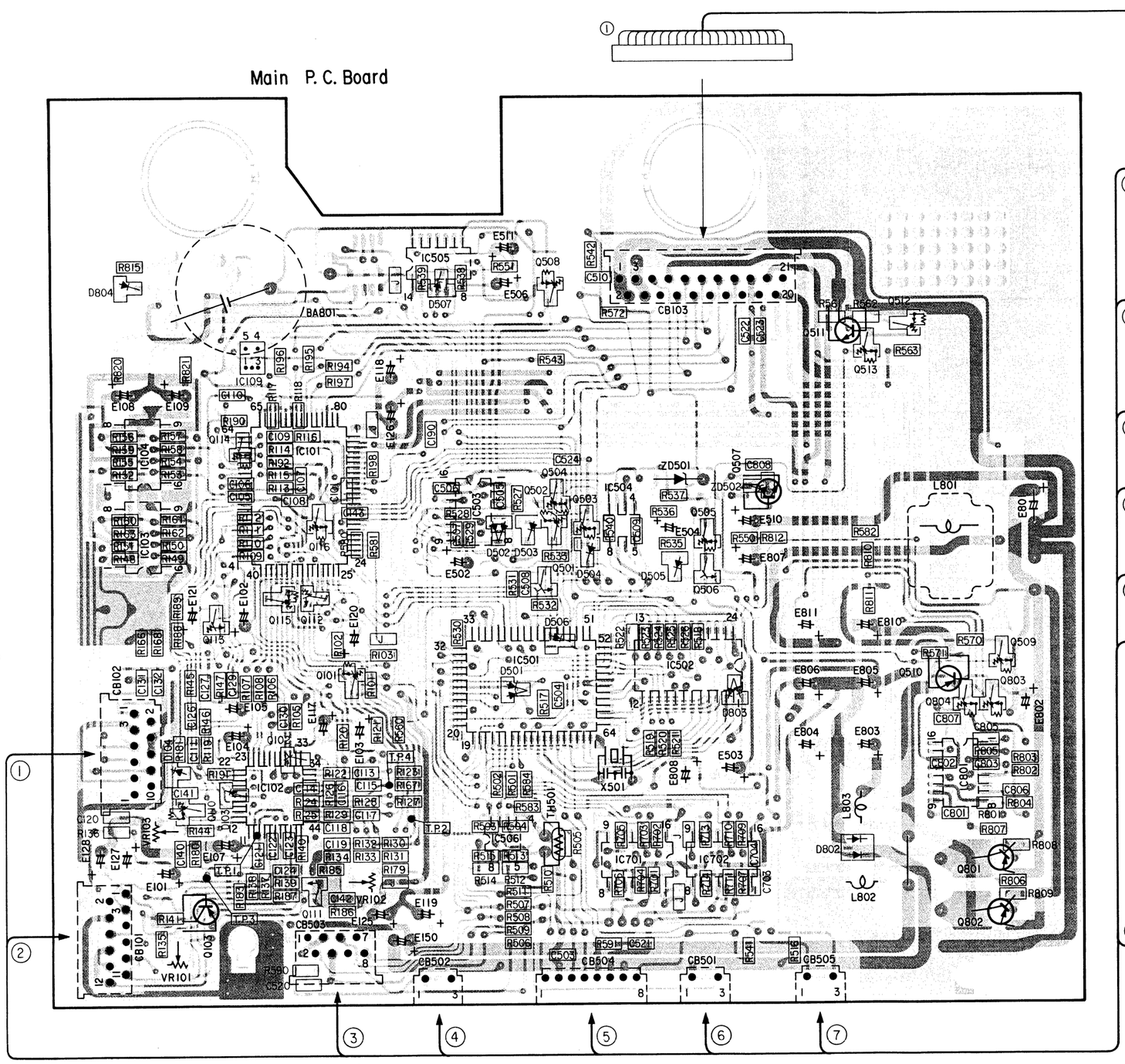
Block Diagram



Parts Layout on P. C. Boards and Wiring Diagram (1/2)



ıg Diagram (1/2)

BLU ..... Blue
GRN ..... Green
BLK ..... Black
GRY ..... Gray
WHT ..... White
RED ..... Red
BRN ..... Brown
ORG ..... Orange
YEL ..... Yellow
PNK ..... Pink
VIO ..... Violet
GRN/WHT ..... Green/White
GRY/WHT ..... Gray/White
GRY/YEL ..... Gray/Yellow
GRN/YEL ..... Green/Yellow
SHLD ..... Shield

To Optical Pick-Up Unit (HD101)

To FPC Actuate P. C. Board

To FPC Elevator P. C. Board

To LED P. C. Board

To Interrupt P. C. Board

Flexible P. C. Board

Assy., DIN-RCA Connector (ET201)

LCH

RCH

Lug

To Magazine Photo P. C. Board

To Switch P. C. Board

Audio P. C. Board

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Parts Layout on P. C. Boards and Wiring Diagram (2/2)

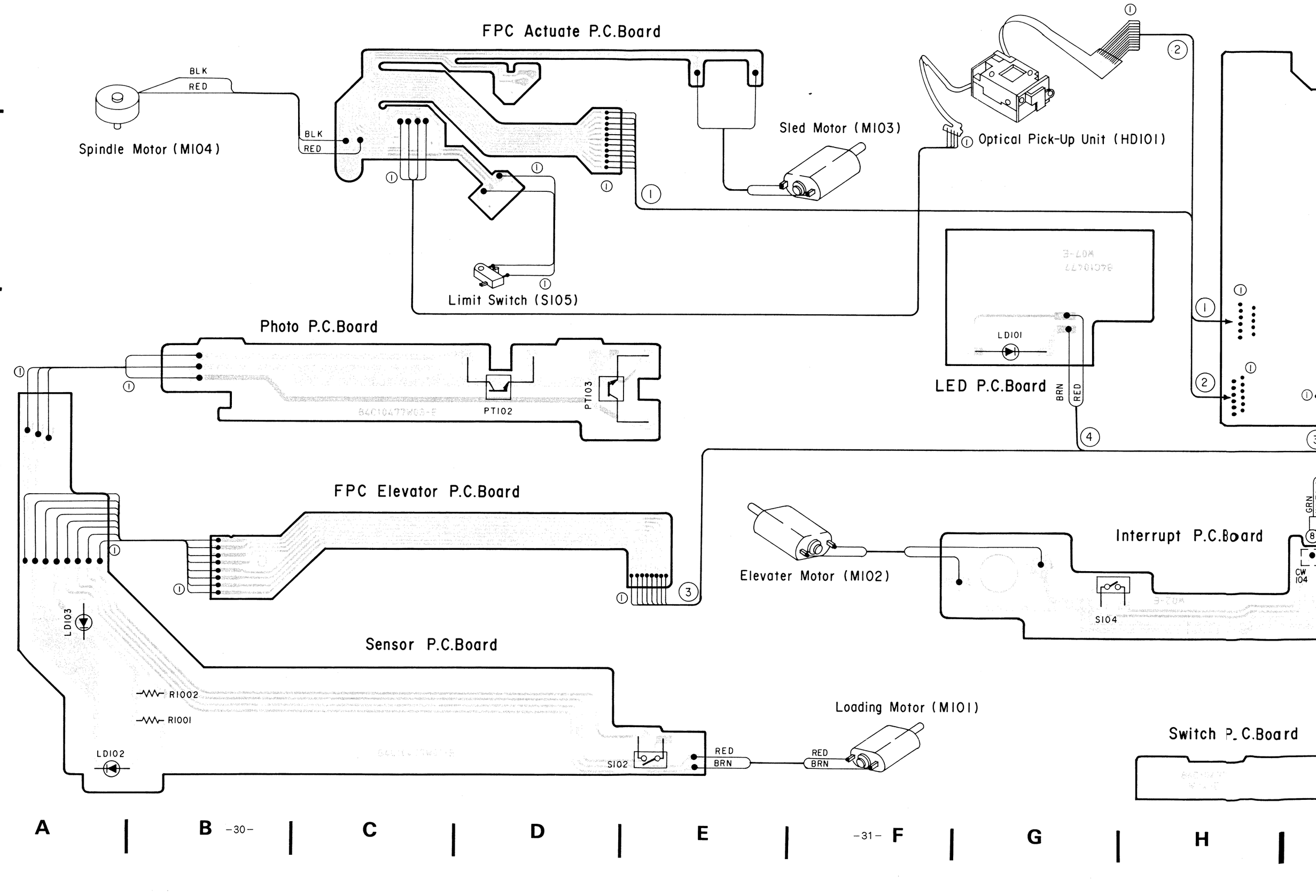

Diagram (2/2)

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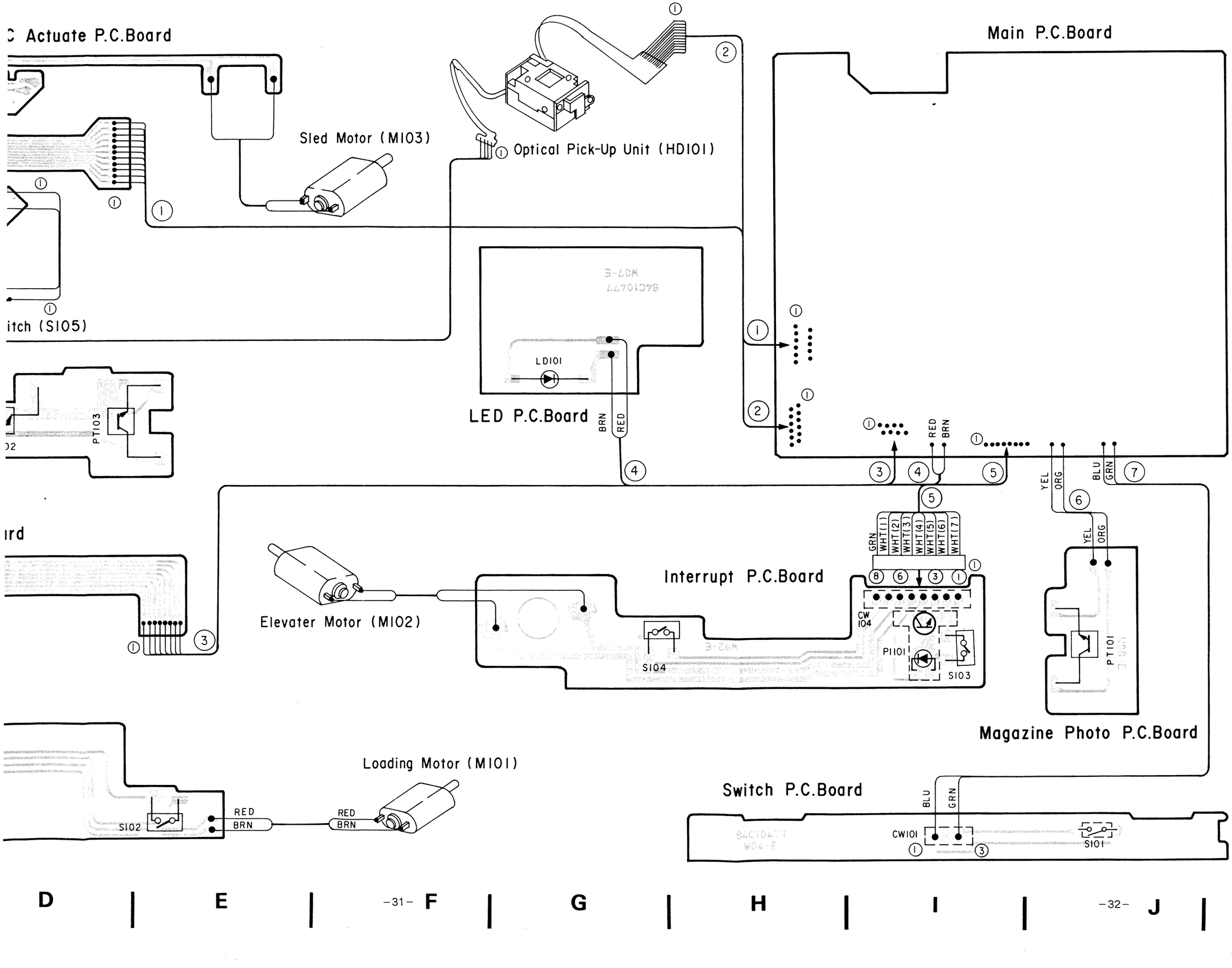


BLU ····· Blue
GRN ····· Green
BLK ····· Black
GRY ····· Gray
WHT ····· White
RED ····· Red
BRN ····· Brown
ORG ····· Orange
YEL ····· Yellow
PNK ····· Pink
VIO ····· Violet
GRN/WHT ····· Green/White
GRY/WHT ····· Gray/White
GRY/YEL ····· Gray/Yellow
GRN/YEL ····· Green/Yellow
SHLD ····· Shield

D E -31- F G H I -32- J K

Schematic Diagram (1/3)

IC	IC506	IC701	IC102	IC702
		IC103		IC104
Transistor(Q),(PT)	PI101 PT101 PT103 PT102	Q111 Q103	Q102	Q110 Q112 Q113

Magazine Photo P. C. Board

PT101 PS502

LED P. C. Board

LD101 AN501

Photo P. C. Board

PT103

PT102 PS502 x 2

Sensor P. C. Board

R1001 1K R1002 1K

LD102 LD103

AN501-B1 x 2

S102 LOADING ARM SWITCH

Interrupt P. C. Board

PI101 GP1S51

S104 MAGAZINE IN SWITCH

S103 HOME POSITION SWITCH

HD101 PICK-UP UNIT SF-87.5

LASER DIODE

2K

TRACKING COIL

FOCUS COIL

M104 SPINDLE MOTOR

M103 SLED MOTOR

M101 LOADING MOTOR

M102 ELEVATOR MOTOR

S105 LIMIT SWITCH

Main P. C. Board (1/2)

CB501 (DISC. OK) (33) R505 220K

CB502 (D.CK LED) R506 180

CB503 (DISC IN) (31) R507 47K

(LOD SW) (32) R508 47K

(+5V) (LOAD M+) C520 0.1 R590 1-1/4

(LOAD M-) (22) R509 33K

(LARM SW) (GND)

CB504 (MAGZ. IN SW) (35)

(ELV. M+) C521 0.1 R591 1-1/4

(ELV. M-) (DISC. NO LED) R510 470

(DISC. NO) C503 0.1

(HMP SW) (34) R511 33K

CB101 (F) (E) (K) (B) (A) (C) (F) (2)

(GND) (VR) (P.D) (LD) (7)

CB102 (LIMIT SW) (36) R560 33K

(GND) (TRACK) C132 0.047 R168 10-1/4

(FOCUS) C131 0.047 R166 10-1/4

(SPDL M-) (SLED M-)

IC506 BA10393F

Vpp GND TH501 100K

R513 1.2K R514 1M R512 47K

TEMPERATURE DETECTOR

ELEVATOR POSITION DETECTOR

R515 100K R502 1K R503 100K R501 18K R504 33K R584 2.7K R583 2.7K

(IC501) (+5V) (30) (23)

LOADING MOTOR DRIVER

R702 10K R705 10K R706 10K

IC701 TCA0372M

CURRENT BIAS MONITORING

THERMAL PROTE-CTION

R701 8.2K

(LOAD M+)

IC702 TCA0372M

C703 0.01 R703 10K R714 10K R704 8.2K R713 10K

ELEVATOR MOTOR DRIVER

(-5V) R709 10K

R710 10K R707 8.2K C704 0.01 R711 8.2K

T.P.3

(ELV. M+) (ELV. M-) (TEOF) (V REF) (FMEO) (FMSO)

REGULATOR (FOR IC102)

Q102 2SA1037K

E117 0.47/50 R120 10K R121 27K E103 10/16

C114 3900P R122 2.7K C113 0.022 R123 270K

R106 22K

C130 4700P

E104 10/16

CD SCRATCH SWITCHING

Q112 DTC114TK

C118 0.047 R103 270 R102 470K E120 10/16

E119 10/16 E125 10/16

SUB BEAM CONTROL

Q111 2SC2412K

R186 1K E107 10/16 R185 18K C142 1800P R134 560K VR102 2.2K R179 390

R187 1K

VR101 100K R135 150K

E150 10/16

E127 10/16 C120 0.01 R136 2.2K

C111 1000P R119 56K R188 3.3K E121 10/16 R189 470K

Q113 DTC114TK

IC102 TA8191F

RF AMP

2VRO 2VRP 2VRN TS2O TS2N TS2P TS1O TS1N TS1P TS0 TSN

FAPO FMEP FMEN FMEO FMPO PVR DMPO DMEO DMEN DMEP Vcc

GND OSCI OSCO FSO FSN VEE SFL FEO FEB SBAD RFRP V REF

R125 100K C116 220P C115 0.1 R126 10K R124 18K

R129 15K C117 2700P R127 120K R167 120K

R128 100K R130 22K R132 10K C119 56P

R131 10K R133 10K

T.P.4 T.P.2

E105 3.3/50 R147 68K C127 0.1 R146 15K

C126 0.1 R145 560 R144 1K VR103 2.2K C121 12P

R140 4.7K C123 0.1 C124 5P R137 10K R139 4.7K R138 4.7K R183 220K

TPO TPI TNI TNI TPI LDO MDI RFN RFO RFI V REF

D103 DAP202K C141 0.1

Q110 DTC114K R181 100K C140 4700P R191 22K R180 10K D104 DAP202U

E805 330/6.3

T.P.1

(V REF) (RFRP) (RFO) (FEO) (TEO) (48)

C122 0.01

CD SCRATCH DETECTOR

SLED SERVO DRIVER

SPINDLE SERVO DRIVER

R820 1-1/4

FOCUS SERVO DRIVER

IC103 TCA0372M

R149 10K

LASER DIODE CONTROL

Q103 2SB1132

E128 10/16 R141 10-1/4 E101 100/10

R148 22K R151 22K

TRACKING SERVO DRIVER

E108 47/16 R161 10K

IC104 TCA0372M

R158 10K R159 22K

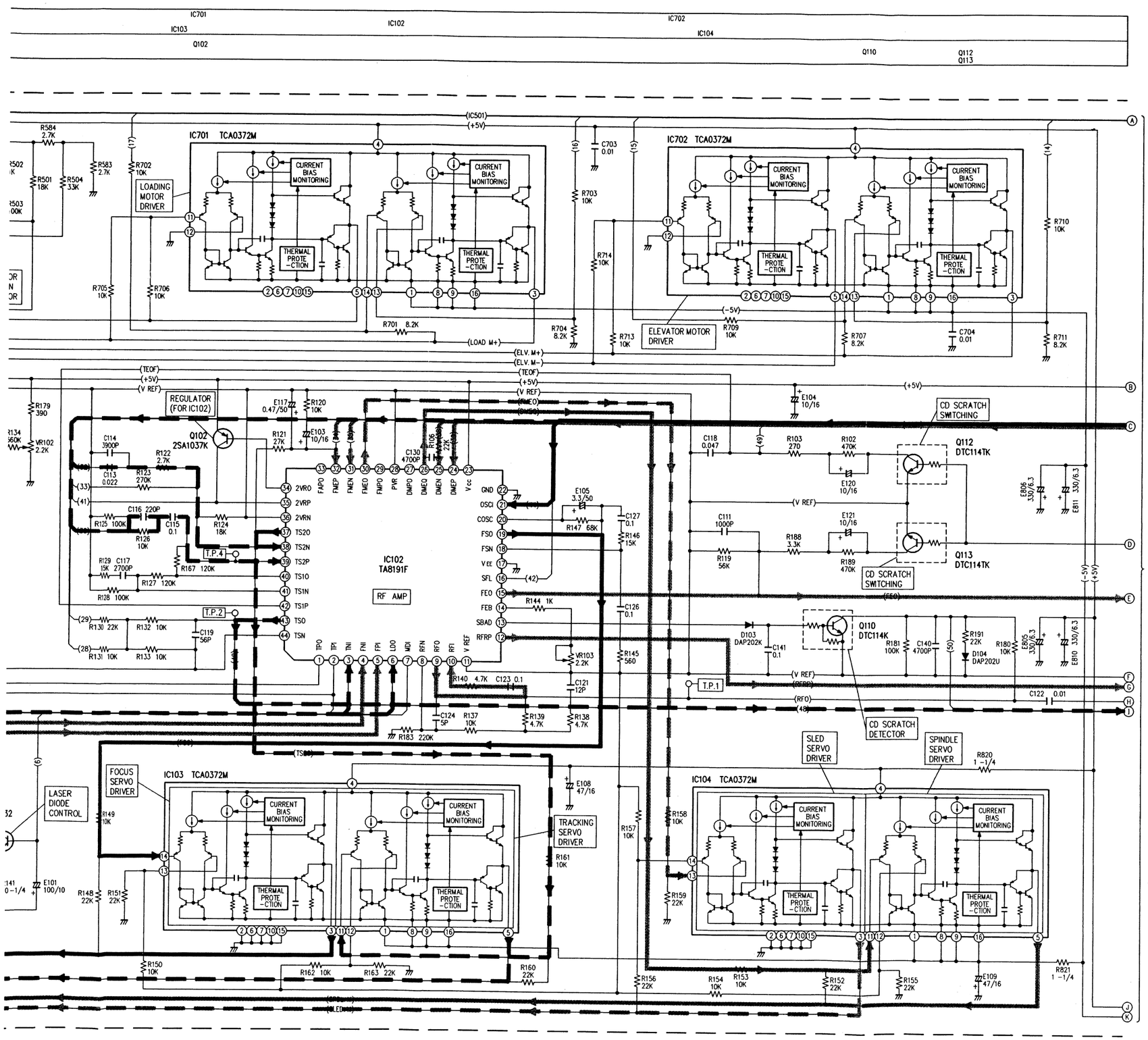
R157 10K

R150 10K R162 10K R163 22K R160 22K

R156 22K R154 10K R153 10K R152 22K R155 22K E109 47/16

R821 1-1/4

(TSO) (SPDL M-) (SLED M-)



IC102

1	1.8V	11	2.1V	21	2.5V	31	2.1V	41	2.1V
2	2.1V	12	2.3V	22	0V	32	2.1V	42	2.1V
3	2.1V	13	2.4V	23	5.1V	33	2.1V	43	2.1V
4	2.1V	14	2.1V	24	2.2V	34	4.5V	44	2.1V
5	2.1V	15	2.1V	25	2.2V	35	4.2V		
6	PS	16	5.1V	26	PS	36	2.1V		
7	PS	17	0V	27	PS	37	2.1V		
8	PS	18	2.1V	28	2.1V	38	2.1V		
9	PS	19	2.1V	29	PS	39	2.1V		
10	PS	20	2.1V	30	PS	40	2.1V		

IC103

1	-5V	9	-5V
2	0V	10	0V
3	PS	11	0V
4	5.1V	12	0V
5	PS	13	1.5V
6	0V	14	1.5V
7	0V	15	0V
8	-5V	16	0V

IC104

1	-5V	9	-5V
2	0V	10	0V
3	PS	11	1.5V
4	5.1V	12	PS
5	PS	13	0V
6	0V	14	1.5V
7	0V	15	0V
8	-5V	16	0.2V

IC506

1	0V
2	5.1V
3	1.6V
4	0V
5	2V
6	5V
7	0V
8	5.1V

IC701

1	0.2V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.3V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

IC702

1	-5V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.2V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

	E	C	B
Q102	5.1V	4.2V	4.5V
Q103	5.1V	0V	4.7V
Q110	2.1V	2.4V	2.2V
Q111	1.2V	1.2V	1.8V
Q112	2.1V	2.1V	0V
Q113	2.1V	2.1V	0V

(Measuring Conditions)

1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

- CD Signal Line (Digital)
- Focus Servo Signal Line
- Tracking Servo Signal Line
- Spindle Servo Signal Line
- Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

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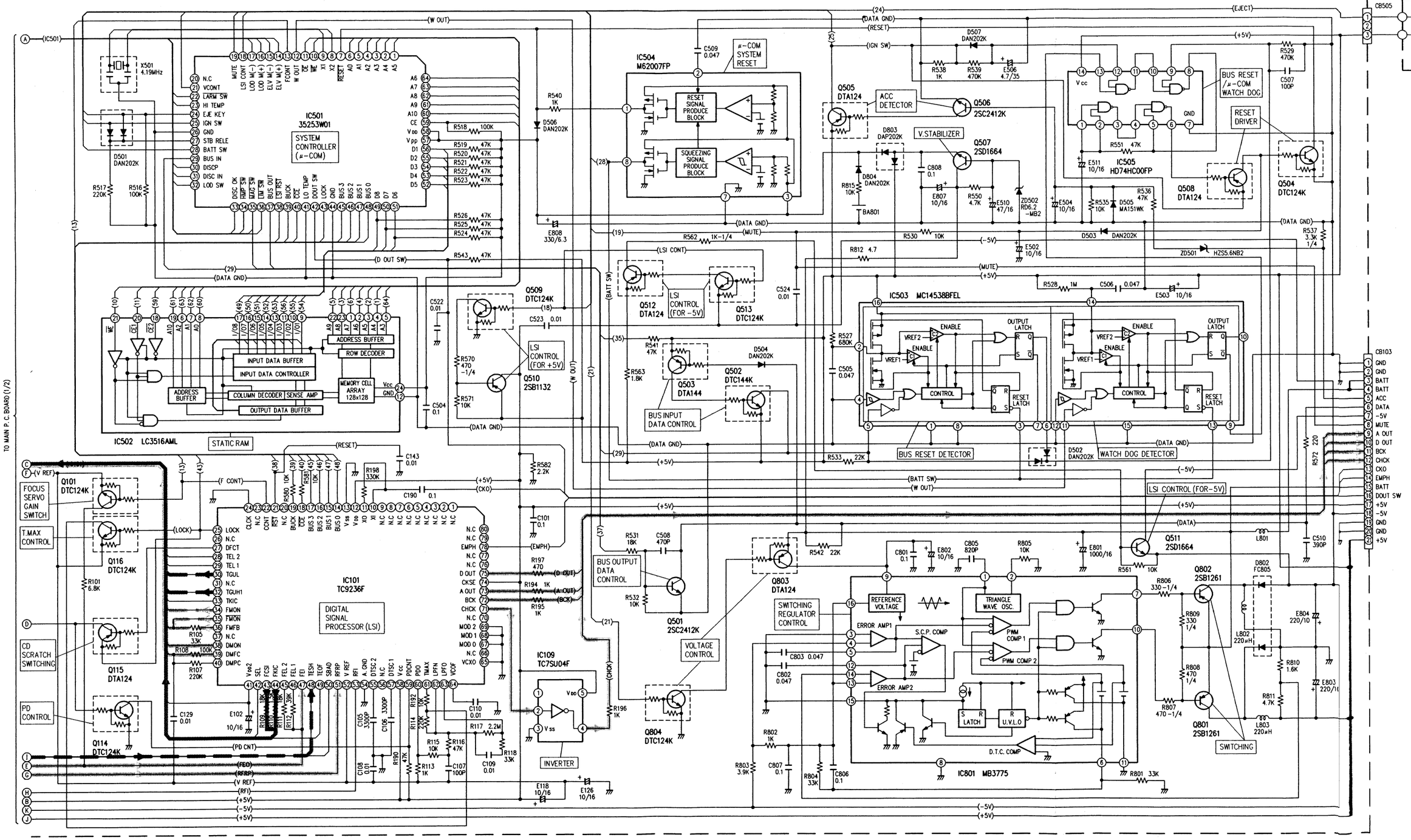
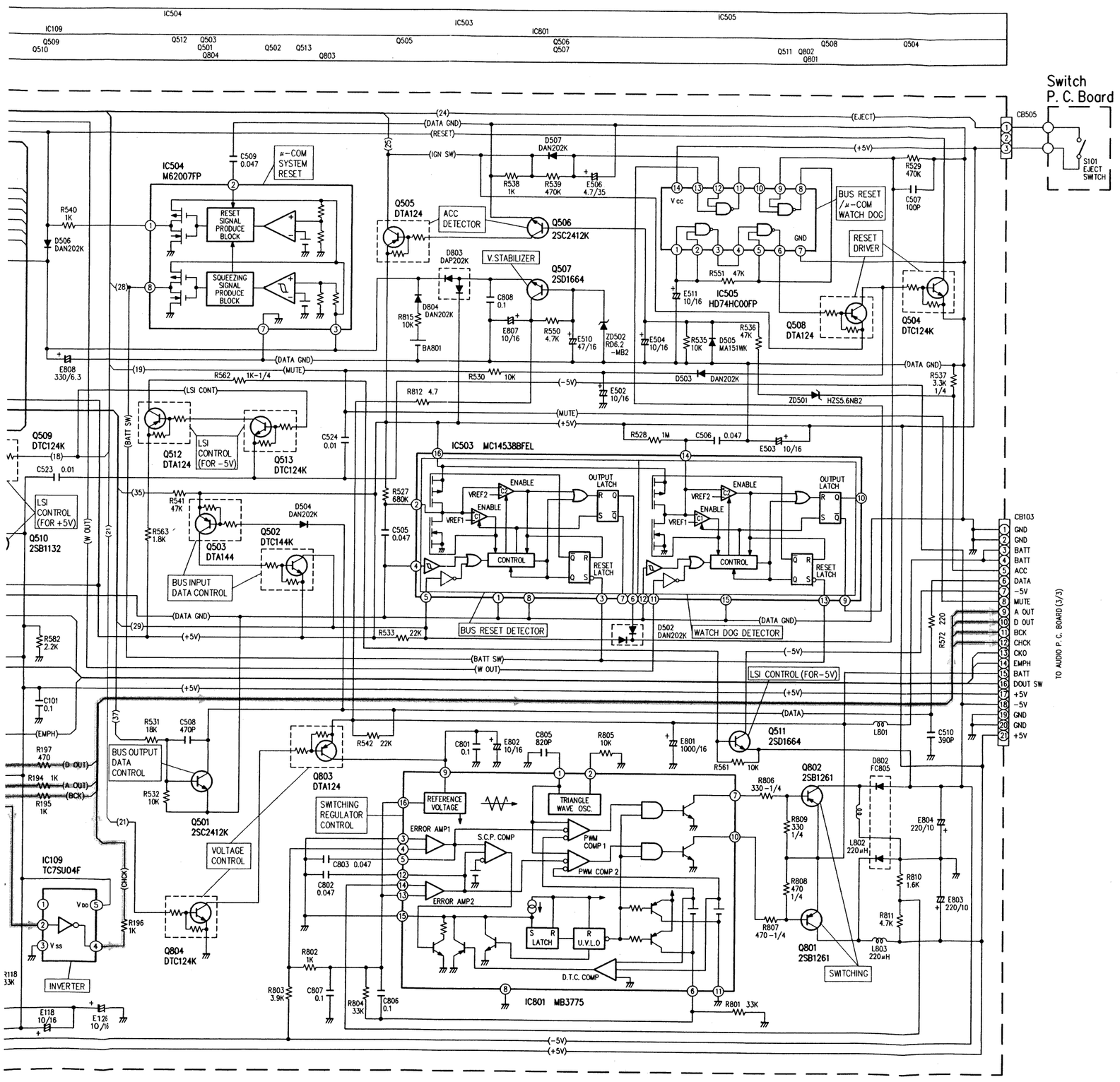
Schematic Diagram (2/3)

IC	IC502	IC501	IC101	IC109	IC504	IC503	IC801	IC505
Transistor (Q)	Q101 Q116 Q114 Q115			Q509 Q510	Q512 Q503 Q501 Q804 Q502 Q513 Q803	Q505	Q506 Q507	Q511 Q802 Q508 Q504 Q801

Main P. C. Board (2/2)





IC101

1	5.1V	17	PS	33	2V	49	2.1V	65	0V
2	5.1V	18	PS	34	2.1V	50	2.4V	66	0V
3	2.4V	19	PS	35	2.1V	51	2.3V	67	0V
4	1.7V	20	1.7V	36	2.1V	52	2.1V	68	0V
5	PS	21	5V	37	5.1V	53	2.5V	69	0V
6	2.4V	22	0V	38	2.1V	54	0V	70	2.6V
7	0.1V	23	0.1V	39	2.1V	55	2.5V	71	2.6V
8	PS	24	0V	40	2.4V	56	2.5V	72	2.5V
9	5.1V	25	5.1V	41	4.2V	57	2.5V	73	0V
10	2.4V	26	5.1V	42	5.1V	58	5.1V	74	5.1V
11	2.4V	27	5.1V	43	2.5V	59	5.1V	75	0V
12	5.1V	28	2.1V	44	2.5V	60	2V	76	5.1V
13	0V	29	2.1V	45	2.1V	61	2.1V	77	5.1V
14	PS	30	2.1V	46	2.1V	62	2.1V	78	0V
15	PS	31	0.3V	47	2.1V	63	2.3V	79	5.1V
16	PS	32	2.1V	48	2.1V	64	1.9V	80	2.2V

IC109

1	0V
2	2.5V
3	0V
4	2.6V
5	5.1V

IC501

1	0V	17	0V	33	0.1V	49	5V		
2	0V	18	5V	34	0V	50	5V		
3	0V	19	0V	35	0V	51	5V		
4	0V	20	0V	36	5.1V	52	5V		
5	0V	21	5V	37	PS	53	5V		
6	5V	22	0V	38	5V	54	5V		
7	5V	23	0V	39	PS	55	5V		
8	2.7V	24	0V	40	PS	56	5V		
9	2.6V	25	5.2V	41	0V	57	PS		
10	5V	26	0V	42	0V	58	5V		
11	5V	27	4.8V	43	5.1V	59	0V		
12	PS	28	5V	44	0V	60	0V		
13	0V	29	PS	45	PS	61	0V		
14	0V	30	0V	46	PS	62	0V		
15	0V	31	5V	47	PS	63	0V		
16	0V	32	0.14V	48	PS	64	0V		

IC504

1	5V
2	5V
3	5V
4	0V
5	0V
6	0V
7	0V
8	5V

IC502

1	5V	9	5V	17	5V
2	0V	10	5V	18	0V
3	0V	11	5V	19	0V
4	0V	12	0V	20	5V
5	0V	13	5V	21	5V
6	0V	14	5V	22	5V
7	0V	15	5V	23	0V
8	0V	16	5V	24	5V

IC503

1	0V	9	0V
2	5V	10	0V
3	5V	11	PS
4	0V	12	0V
5	5V	13	5V
6	5V	14	5V
7	5V	15	0V
8	0V	16	5V

IC505

1	0V	8	0V
2	0V	9	PS
3	5.2V	10	5.2V
4	5.2V	11	5.2V
5	0V	12	5V
6	5.2V	13	0V
7	0V	14	5.2V

IC801

1	5V	9	5V
2	0V	10	PS
3	0V	11	5V
4	0V	12	0V
5	0V	13	1.3V
6	0V	14	1.3V
7	PS	15	0V
8	0V	16	1.3V

	E	C	B
Q101	2.1V	2.1V	0V
Q114	0V	PS	PS
Q115	5.1V	0V	5.1V
Q116	2.1V	2.1V	4.9V
Q501	0V	PS	PS
Q502	0V	PS	PS
Q503	5.2V	PS	PS
Q504	0V	5V	0V
Q505	5.2V	5.1V	0V
Q506	0V	0V	0.6V
Q507	5.8V	13.1V	0V
Q508	5.2V	0V	5.2V
Q509	0V	0.1V	5V
Q510	5.2V	5.1V	4.4V
Q511	-5V	-4.9V	-4.3V
Q512	1.4V	-2.3V	0V
Q513	0V	0V	5V
Q801	13.7V	5.3V	13.3V
Q802	13.7V	0.1V	13.4V
Q803	13.6V	13.6V	0V
Q804	0V	0V	5V

(Measuring Conditions)

1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

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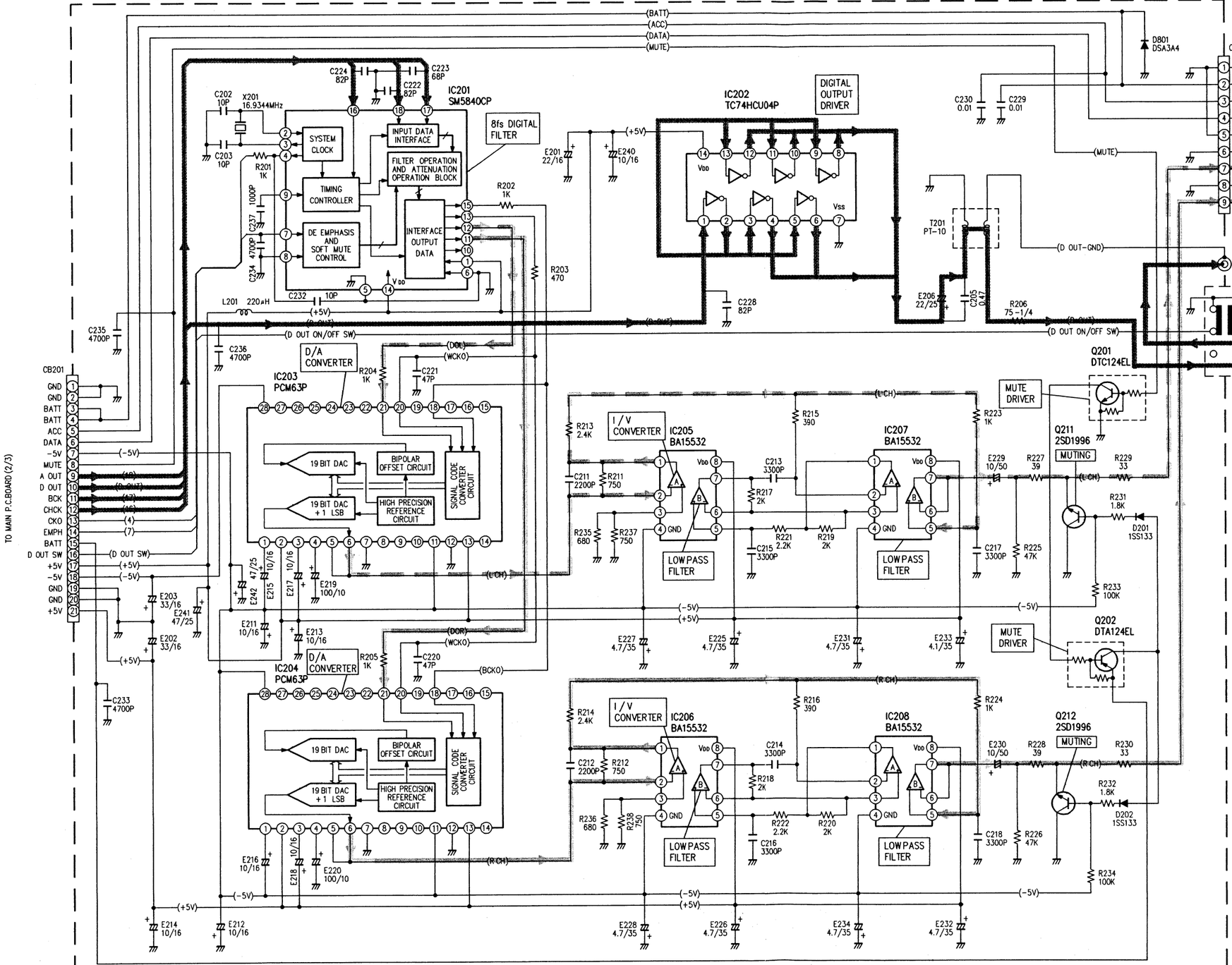
Schematic Diagram (3/3)

IC	IC203 IC204	IC201	IC205 IC206	IC202	IC207 IC208		
Transistor(Q)						Q211 Q212	Q201 Q202

Audio P.C.Board



IC201			
1	5V	10	P.S.
2	P.S.	11	P.S.
3	P.S.	12	P.S.
4	P.S.	13	P.S.
5	0V	14	5V
6	0V	15	P.S.
7	5V	16	P.S.
8	0V	17	P.S.
9	5V	18	P.S.

IC202			
1	0V	8	0V
2	5.1V	9	5.1V
3	5.1V	10	0V
4	0V	11	5.1V
5	5.1V	12	0V
6	0V	13	5.1V
7	0V	14	5.1V

IC203			
1	−1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	−3.8V
10	0V	24	3.8V
11	5V	25	−3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	−5V

IC204			
1	−1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	−3.8V
10	0V	24	3.8V
11	−5V	25	−3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	−5V

IC205	
1	P.S.
2	P.S.
3	P.S.
4	−5V
5	0V
6	0V
7	P.S.
8	5V

IC206	
1	P.S.
2	P.S.
3	P.S.
4	−5V
5	0V
6	0V
7	P.S.
8	5V

IC207	
1	P.S.
2	P.S.
3	P.S.
4	−5V
5	P.S.
6	P.S.
7	P.S.
8	5V

IC208	
1	P.S.
2	P.S.
3	P.S.
4	−5V
5	P.S.
6	P.S.
7	P.S.
8	5V

	E	C	B
Q201	0V	0V	0V
Q202	13.6V	−4.8V	0V
Q211	P.S.	0V	−5V
Q212	P.S.	0V	−5V

(Measuring Conditions)

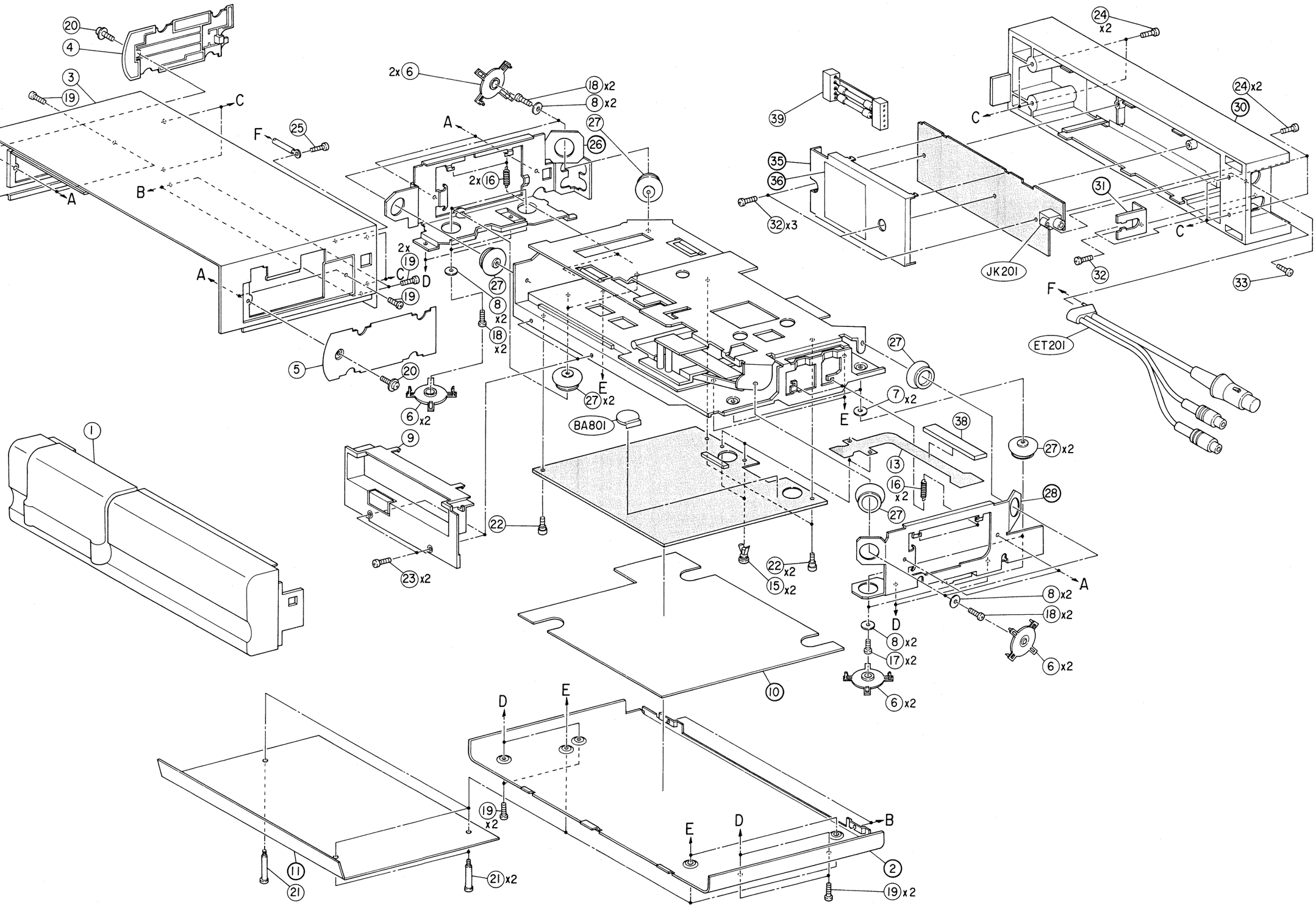
1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

CD Signal Line (Digital)
L-ch Signal Line
R-ch Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$

Exploded View (Cabinet)

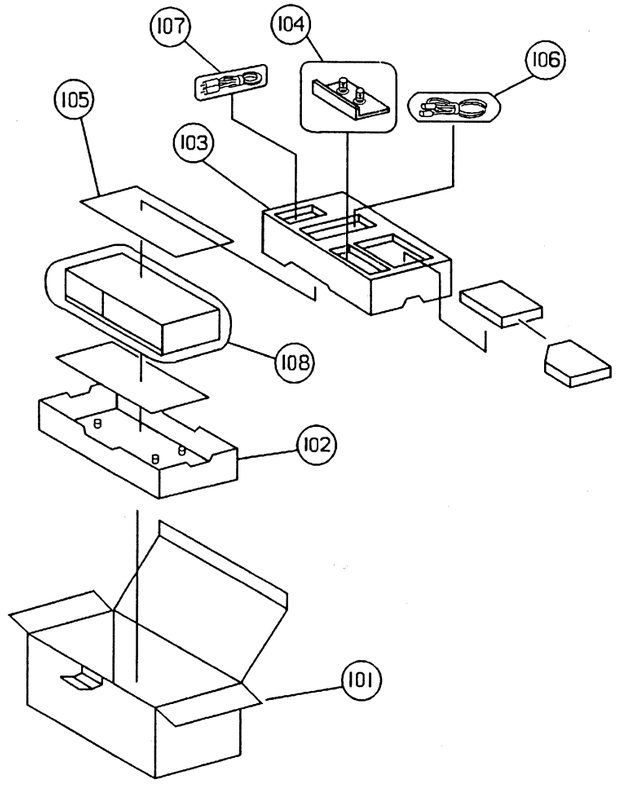


Packing Assembly Parts List

Symbol No.	Part No.	Description
101	56S30003W28	Carton, Packing (Individual)
102	56D30917W01	Tray, Packing (L)
103	56D30917W02	Tray, Packing (R)
104	01V33500W17	Assy., Kit Installation
104-1	03D40121T46	Bolt, Hex. W/Double Washer (M4 × 6)
104-2	02B47353F06	Nut, Hex. Flange (M6)
104-3	03B90962F03	Bolt, Hex. Flange (M6 × 50)
104-4	02A44071U02	Wing, Nut (M6)
104-5	04S40071G22	Washer, Spring Lock (M6.1)
104-6	07B22460W01	Bracket, Side (L)
104-7	07B22460W02	Bracket, Side (R)
104-8	07A13484W02	Bracket, Mounting Base
104-9	07B31413W01	Bracket, Side

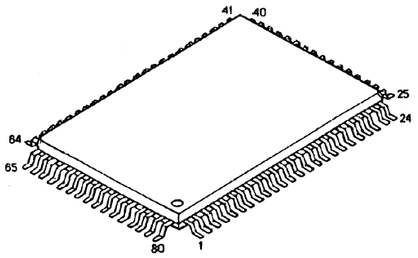
Symbol No.	Part No.	Description
105	68P22493W72	Owner's Manual
106	01T15904W02	Assy., DIN Connector (5m)
or	01T15904W01	Assy., DIN Connector (5.5m)
107	28T35041W01	Assy., RCA Cable (5.5m)
108	56C40990T19	Sack, Polyethylene

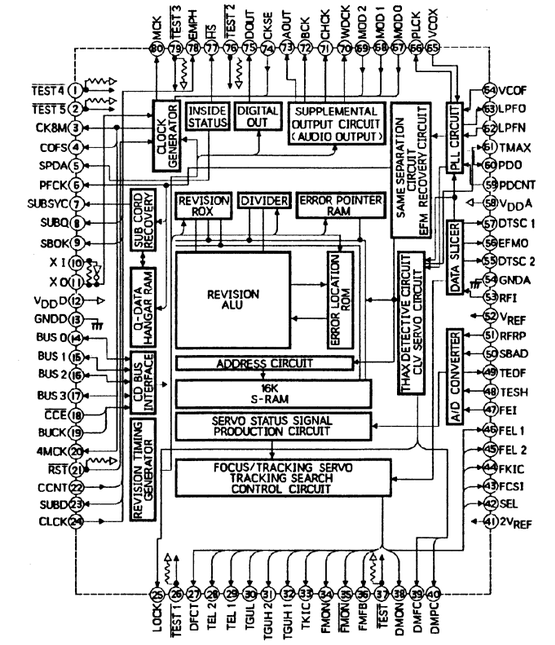
Packing Method View



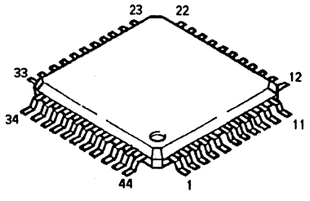
Semi - Conductor Lead Identifications

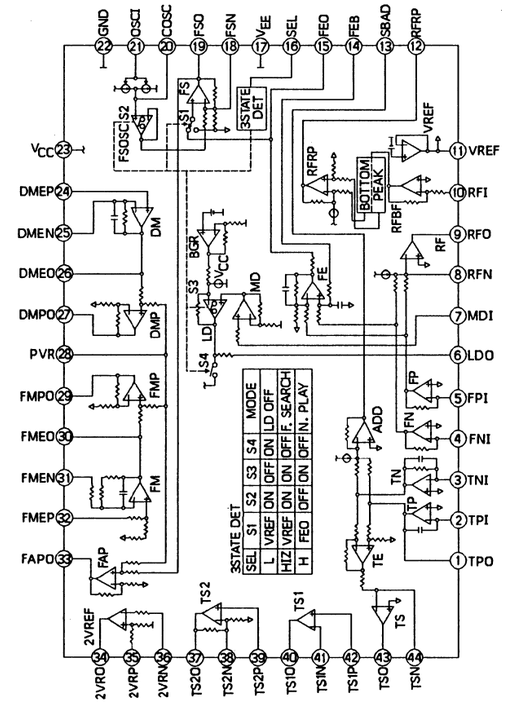
TC9236F : IC101





TA8191F : IC102





Schematic Diagram (1/3)

IC	IC506	IC701	IC102	IC702
		IC103		IC104
Transistor(Q),(PT)	PI101 PT101 PT103 PT102	Q111 Q103	Q102	Q110 Q112 Q113

Magazine Photo P. C. Board

PT101 PS502

LED P. C. Board

LD101 AN501

Photo P. C. Board

PT103

PT102 PS502 x 2

Sensor P. C. Board

R1001 1K, R1002 1K, LD102, LD103, AN501-B1 x 2, S102 LOADING ARM SWITCH

Interrupt P. C. Board

PI101 GP1S51, S104 MAGAZINE IN SWITCH, S103 HOME POSITION SWITCH

HD101 PICK-UP UNIT SF-87.5

Main P. C. Board (1/2)

CB501 (DISC. OK) (33), (GND), R505 220K

CB502 (D.CK LED), R506 180, (GND)

CB503 (DISC IN) (31), R507 47K, (GND), (LOD SW) (32), R508 47K, (+5V), (LOAD M+), C520 0.1, R590 1-1/4, (LOAD M-), (LARM SW) (22), R509 33K, (GND)

M101 LOADING MOTOR

CB504 (MAGZ. IN SW) (35), (GND), (ELV. M+), C521 0.1, R591 1-1/4, (ELV. M-), (DISC. NO LED), R510 470, (DISC. NO), R511 33K, (GND), (HMP SW) (34), C503 0.1

M102 ELEVATOR MOTOR

CB101 (D), (C), (K), (E), (B), (A), (F), (6)

CB102 (LIMIT SW) (36), R560 33K, (GND), (GND), (GND), (TRACK) C132 0.047 R168 10-1/4, (GND), (FOCUS) C131 0.047 R166 10-1/4

S105 LIMIT SWITCH

LASER DIODE, 2K, 0.1

TRACKING COIL, FOCUS COIL

M104 SPINDLE MOTOR, M103 SLED MOTOR

IC506 BA10393F

(IC501) (+5V), R584 2.7K, R502 1K, R501 18K, R504 33K, R583 2.7K, R503 100K, R515 100K, R513 1.2K, R514 1M, R512 47K, TH501 100K

TEMPERATURE DETECTOR

ELEVATOR POSITION DETECTOR

(DISC. NO), (LOAD M-), (LOAD M+), (ELV. M+), (ELV. M-)

T.P.3

R186 1K, E107 10/16, R185 18K, R134 560K, R179 390, C142 1800P, VR102 2.2K

E119 10/16, E125 10/16

SUB BEAM CONTROL

Q111 2SC2412K

R187 1K, E150 10/16, VR101 100K, R135 150K, E127 10/16, C120 0.01, R136 2.2K

IC701 TCA0372M

R702 10K, LOADING MOTOR DRIVER, CURRENT BIAS MONITORING, THERMAL PROTE-CTION, R705 10K, R706 10K, R701 8.2K

IC702 TCA0372M

C703 0.01, R703 10K, R714 10K, R704 8.2K, R713 10K, ELEVATOR MOTOR DRIVER, R709 10K, (-5V), R707 8.2K, C704 0.01, R710 10K, R711 8.2K

REGULATOR (FOR IC102)

Q102 2SA1037K

E117 0.47/50, R120 10K, E103 10/16, R121 27K, C114 3900P, R122 2.7K, C113 0.022, R123 270K, C116 220P, C115 0.1, R125 100K, R126 10K, R124 18K, T.P.4, R129 15K, C117 2700P, R167 120K, R127 120K, R128 100K, T.P.2, R130 22K, R132 10K, C119 56P, R131 10K, R133 10K

IC102 TA8191F

RF AMP

2VR0 2VRP 2VRN TS2O TS2N TS2P TS1O TS1N TS1P TS0 TSN

FAPO FAMP FANM FAMO FAPO PVR DAPO DAMO DANM DAMP DAPP Vcc

GND OSCI COSC FSO FSN VEE SFL FEO FEB SBAD RFRP

TPO TPI TNI FNI FPI LDO MDI RFN RFO RFI V REF

R106 22K, C130 4700P, E105 3.3/50, R147 68K, C127 0.1, R146 15K, R144 1K, C126 0.1, R145 560, VR103 2.2K, C121 12P, R140 4.7K, C123 0.1, C124 SP, R137 10K, R139 4.7K, R138 4.7K, R183 220K

E104 10/16, C118 0.047, R103 270, R102 470K, E120 10/16, C111 1000P, R119 56K, R188 3.3K, E121 10/16, R189 470K

CD SCRATCH SWITCHING

Q112 DTC114TK, Q113 DTC114TK, Q110 DTC114K

D103 DAP202K, C141 0.1, D104 DAP202U, R191 22K, R181 100K, C140 4700P, R180 10K

T.P.1, C122 0.01

CD SCRATCH DETECTOR

SLED SERVO DRIVER, SPINDLE SERVO DRIVER, R820 1-1/4

FOCUS SERVO DRIVER

IC103 TCA0372M

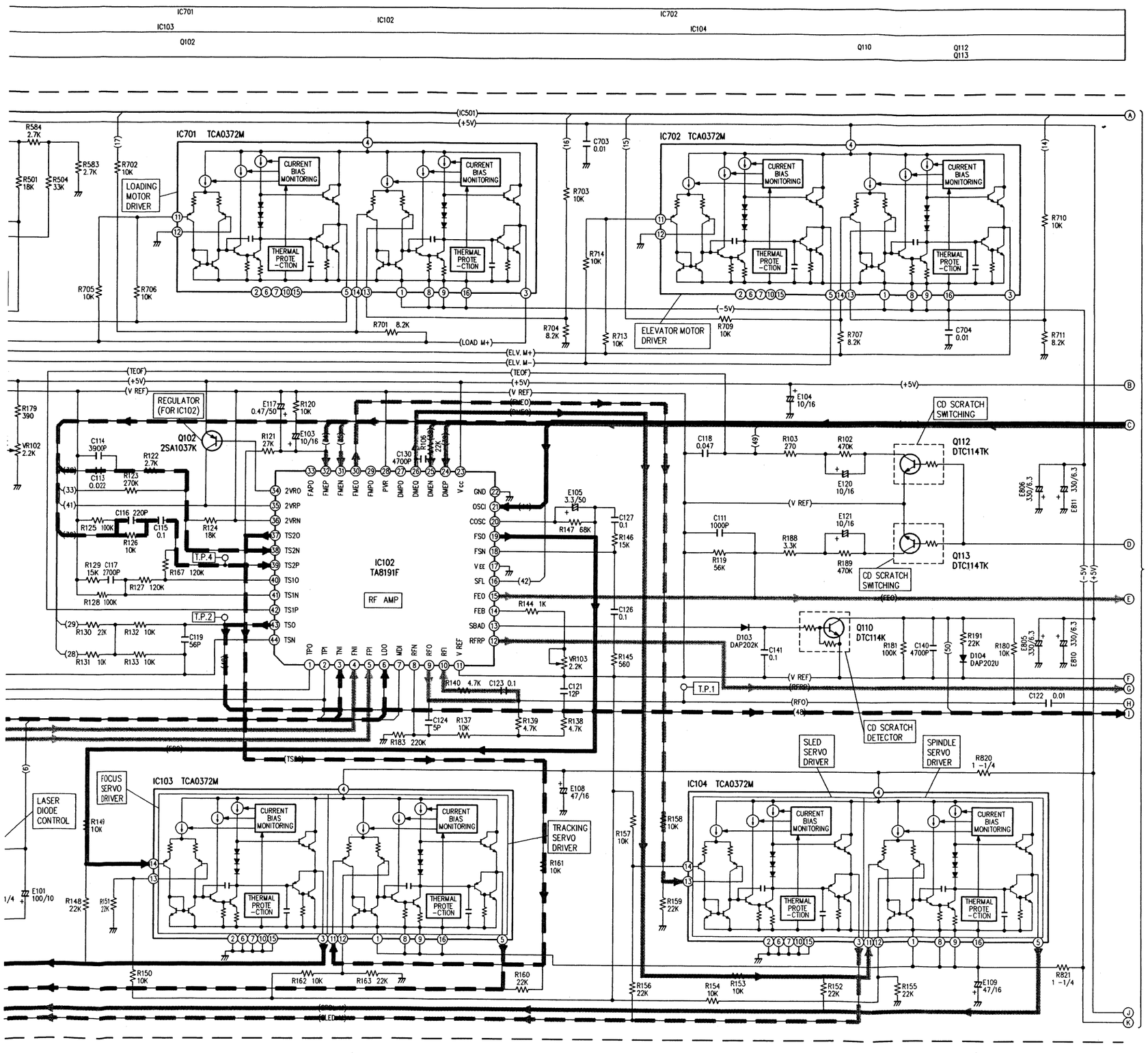
Q103 2SB1132, LASER DIODE CONTROL, E128 10/16, R141 10-1/4, E101 100/10

R149 10K, R148 22K, R151 22K, R150 10K, R162 10K, R163 22K, R160 22K

TRACKING SERVO DRIVER

IC104 TCA0372M

E108 47/16, R161 10K, R157 10K, R158 10K, R159 22K, R156 22K, R154 10K, R153 10K, R152 22K, R155 22K, E109 47/16, R821 1-1/4



IC102

1	1.8V	11	2.1V	21	2.5V	31	2.1V	41	2.1V
2	2.1V	12	2.3V	22	0V	32	2.1V	42	2.1V
3	2.1V	13	2.4V	23	5.1V	33	2.1V	43	2.1V
4	2.1V	14	2.1V	24	2.2V	34	4.5V	44	2.1V
5	2.1V	15	2.1V	25	2.2V	35	4.2V		
6	PS	16	5.1V	26	PS	36	2.1V		
7	PS	17	0V	27	PS	37	2.1V		
8	PS	18	2.1V	28	2.1V	38	2.1V		
9	PS	19	2.1V	29	PS	39	2.1V		
10	PS	20	2.1V	30	PS	40	2.1V		

IC103

1	-5V	9	-5V
2	0V	10	0V
3	PS	11	0V
4	5.1V	12	0V
5	PS	13	1.5V
6	0V	14	1.5V
7	0V	15	0V
8	-5V	16	0V

IC104

1	-5V	9	-5V
2	0V	10	0V
3	PS	11	1.5V
4	5.1V	12	PS
5	PS	13	0V
6	0V	14	1.5V
7	0V	15	0V
8	-5V	16	0.2V

IC506

1	0V
2	5.1V
3	1.6V
4	0V
5	2V
6	5V
7	0V
8	5.1V

IC701

1	0.2V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.3V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

IC702

1	-5V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.2V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

	E	C	B
Q102	5.1V	4.2V	4.5V
Q103	5.1V	0V	4.7V
Q110	2.1V	2.4V	2.2V
Q111	1.2V	1.2V	1.8V
Q112	2.1V	2.1V	0V
Q113	2.1V	2.1V	0V

(Measuring Conditions)

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Volt Meter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
   Digital Output Switch (OFF)

CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

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Schematic Diagram (2/3)

IC	IC502	IC501	IC101	IC109	IC504	IC503	IC801	IC505
Transistor (Q)	Q101 Q116 Q114 Q115		Q509 Q510	Q512 Q503 Q501 Q804	Q502 Q513 Q803	Q505	Q506 Q507	Q511 Q802 Q801 Q508 Q504

Main P. C. Board (2/2)

Switch P. C. Board

IC501 35253W01 SYSTEM CONTROLLER (μ-COM)

IC504 M62007FP μ-COM SYSTEM RESET; RESET SIGNAL PRODUCE BLOCK; SQUEEZING SIGNAL PRODUCE BLOCK

IC502 LC3516AML STATIC RAM

IC101 TC9236F DIGITAL SIGNAL PROCESSOR (LSI)

IC109 TC7SU04F INVERTER

IC503 MC145388FEL

IC505 HD74HC00FP

IC801 MB3775

Q101 DTC124K FOCUS SERVO GAIN SWITCH

Q116 DTC124K T.MAX CONTROL

Q115 DTA124 CD SCRATCH SWITCHING

Q114 DTC124K PD CONTROL

Q509 DTC124K

Q510 2SB1132 LSI CONTROL (FOR +5V)

Q512 DTA124 LSI CONTROL (FOR -5V)

Q513 DTC124K

Q502 DTC144K

Q503 DTA144 BUS INPUT DATA CONTROL

Q501 2SC2412K BUS OUTPUT DATA CONTROL

Q804 DTC124K VOLTAGE CONTROL

Q505 DTA124 ACC DETECTOR

Q506 2SC2412K

Q507 2SD1664 V.STABILIZER

Q508 DTA124 RESET DRIVER

Q504 DTC124K

Q803 DTA124 SWITCHING REGULATOR CONTROL

Q511 2SD1664 LSI CONTROL (FOR-5V)

Q802 2SB1261

Q801 2SB1261 SWITCHING

D501 DAN202K

D506 DAN202K

D507 DAN202K

D803 DAP202K

D804 DAN202K

D504 DAN202K

D502 DAN202K WATCH DOG DETECTOR

D503 DAN202K

D505 MA151WK

D802 FC805

ZD502 RD6.2 -MB2

ZD501 HZS5.6NB2

BA801

L801 L802 220μH L803 220μH

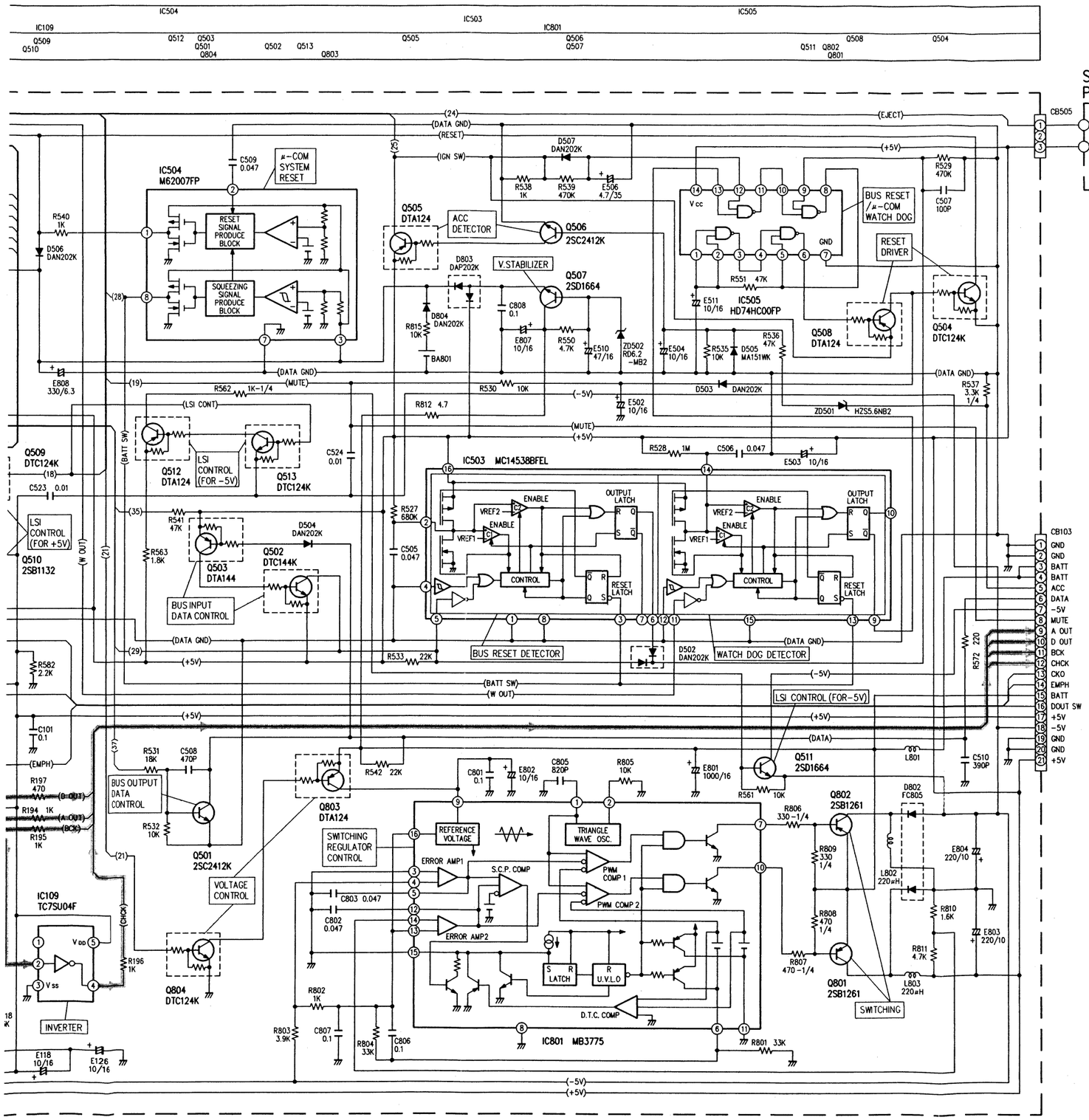
BUS RESET DETECTOR

CB505

CB103 GND GND BATT BATT ACC DATA -5V MUTE A OUT D OUT BCK CHCK CKO EMPH BATT DOUT SW +5V -5V GND GND +5V

TO MAIN P. C. BOARD (1/2)

TO AUDIO P. C. BOARD (3/3)



IC101

1	5.1V	17	PS	33	2V	49	2.1V	65	0V
2	5.1V	18	PS	34	2.1V	50	2.4V	66	0V
3	2.4V	19	PS	35	2.1V	51	2.3V	67	0V
4	1.7V	20	1.7V	36	2.1V	52	2.1V	68	0V
5	PS	21	5V	37	5.1V	53	2.5V	69	0V
6	2.4V	22	0V	38	2.1V	54	0V	70	2.6V
7	0.1V	23	0.1V	39	2.1V	55	2.5V	71	2.6V
8	PS	24	0V	40	2.4V	56	2.5V	72	2.5V
9	5.1V	25	5.1V	41	4.2V	57	2.5V	73	0V
10	2.4V	26	5.1V	42	5.1V	58	5.1V	74	5.1V
11	2.4V	27	5.1V	43	2.5V	59	5.1V	75	0V
12	5.1V	28	2.1V	44	2.5V	60	2V	76	5.1V
13	0V	29	2.1V	45	2.1V	61	2.1V	77	5.1V
14	PS	30	2.1V	46	2.1V	62	2.1V	78	0V
15	PS	31	0.3V	47	2.1V	63	2.3V	79	5.1V
16	PS	32	2.1V	48	2.1V	64	1.9V	80	2.2V

IC109

1	0V
2	2.5V
3	0V
4	2.6V
5	5.1V

IC501

1	0V	17	0V	33	0.1V	49	5V		
2	0V	18	5V	34	0V	50	5V		
3	0V	19	0V	35	0V	51	5V		
4	0V	20	0V	36	5.1V	52	5V		
5	0V	21	5V	37	PS	53	5V		
6	5V	22	0V	38	5V	54	5V		
7	5V	23	0V	39	PS	55	5V		
8	2.7V	24	0V	40	PS	56	5V		
9	2.6V	25	5.2V	41	0V	57	PS		
10	5V	26	0V	42	0V	58	5V		
11	5V	27	4.8V	43	5.1V	59	0V		
12	PS	28	5V	44	0V	60	0V		
13	0V	29	PS	45	PS	61	0V		
14	0V	30	0V	46	PS	62	0V		
15	0V	31	5V	47	PS	63	0V		
16	0V	32	0.14V	48	PS	64	0V		

IC504

1	5V
2	5V
3	5V
4	0V
5	0V
6	0V
7	0V
8	5V

IC502

1	5V	9	5V	17	5V
2	0V	10	5V	18	0V
3	0V	11	5V	19	0V
4	0V	12	0V	20	5V
5	0V	13	5V	21	5V
6	0V	14	5V	22	5V
7	0V	15	5V	23	0V
8	0V	16	5V	24	5V

IC503

1	0V	9	0V
2	5V	10	0V
3	5V	11	PS
4	0V	12	0V
5	5V	13	5V
6	5V	14	5V
7	5V	15	0V
8	0V	16	5V

IC505

1	0V	8	0V
2	0V	9	PS
3	5.2V	10	5.2V
4	5.2V	11	5.2V
5	0V	12	5V
6	5.2V	13	0V
7	0V	14	5.2V

IC801

1	5V	9	5V
2	0V	10	PS
3	0V	11	5V
4	0V	12	0V
5	0V	13	1.3V
6	0V	14	1.3V
7	PS	15	0V
8	0V	16	1.3V

	E	C	B
Q101	2.1V	2.1V	0V
Q114	0V	PS	PS
Q115	5.1V	0V	5.1V
Q116	2.1V	2.1V	4.9V
Q501	0V	PS	PS
Q502	0V	PS	PS
Q503	5.2V	PS	PS
Q504	0V	5V	0V
Q505	5.2V	5.1V	0V
Q506	0V	0V	0.6V
Q507	5.8V	13.1V	0V
Q508	5.2V	0V	5.2V
Q509	0V	0.1V	5V
Q510	5.2V	5.1V	4.4V
Q511	-5V	-4.9V	-4.3V
Q512	1.4V	-2.3V	0V
Q513	0V	0V	5V
Q801	13.7V	5.3V	13.3V
Q802	13.7V	0.1V	13.4V
Q803	13.6V	13.6V	0V
Q804	0V	0V	5V

(Measuring Conditions)

1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (3/3)

| IC | IC201 | IC202 | | |

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. =	Resistor	CAP. =	Capacitor
C.F. =	Carbon Film	ELY. =	Electrolytic
M.F. =	Metal Film	CER. =	Ceramic
M.O. =	Metal Oxide Film	MYL. =	Mylar
M.P. =	Metal Plate	TAN. =	Tantalum
TR. =	Transistor	POLY. =	Polystyrol
TRANS. =	Transformer	PP. =	Polypropylene
CP. =	Chip	PLT. =	Polyethylene
		PF. =	Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC101	51T25985W01	TC9236F
IC102	51T25984W01	TA8191F
IC103	51T15264W01	TCA0372M
IC104	51T15264W01	TCA0372M
IC109	51T35229W01	TC7SU04F
IC501	51T35253W01	35253W01
IC502	51T84723F02	LC3516AML
or	51T90640F01	CXK5816M
IC503	51T25370W01	MC14538BFEL
or	51T90267F02	μPD4538BG
IC504	51T35308W01	M62007FP
IC505	51T90277F10	HD74HC00FP
or	51T25904W03	MC74HC00AFL1
IC506	51T73285F01	BA10393F
IC701	51T15264W01	TCA0372M
IC702	51T15264W01	TCA0372M
IC801	51T35309W01	MB3775

Transistors

Symbol No.	Part No.	Description
Q101	48T62967F03	CP., DTC124K
Q102	48T63420F01	CP., 2SA1037K
Q103	48T80611F01	CP., 2SB1132
Q110	48T62967F02	CP., DTC114K
Q111	48T63417F01	CP., 2SC2412K
Q112	48T62967F09	CP., DTC114TK
Q113	48T62967F09	CP., DTC114TK
Q114	48T62967F03	CP., DTC124K
Q115	48T62966F03	CP., DTA124
Q116	48T62967F03	CP., DTC124K
Q501	48T63417F01	CP., 2SC2412K
Q502	48T62967F04	CP., DTC144K
Q503	48T62966F04	CP., DTA144
Q504	48T62967F03	CP., DTC124K
Q505	48T62966F03	CP., DTA124
Q506	48T63417F01	CP., 2SC2412K
Q507	48T80614F01	CP., 2SD1664
Q508	48T62966F03	CP., DTA124
Q509	48T62967F03	CP., DTC124K
Q510	48T80611F01	CP., 2SB1132
Q511	48T80614F01	CP., 2SD1664
Q512	48T62966F03	CP., DTA124
Q513	48T62967F03	CP., DTC124K
Q801	48T15511W02	CP., 2SB1261
Q802	48T15511W02	CP., 2SB1261
Q803	48T62966F03	CP., DTA124
Q804	48T62967F03	CP., DTC124K

Diodes

Symbol No.	Part No.	Description
D103	48T63463F01	CP., DAP202K
D104	48T94068F02	CP., DAP202U
D501	48T63462F01	CP., DAN202K
D502	48T63462F01	CP., DAN202K
D503	48T63462F01	CP., DAN202K
D504	48T63462F01	CP., DAN202K
D505	48T52446F01	CP., MA151WK
D506	48T63462F01	CP., DAN202K
D507	48T63462F01	CP., DAN202K
D802	48T35310W01	CP., FC805
D803	48T63463F01	CP., DAP202K
D804	48T63462F01	CP., DAN202K
ZD501	48T90517F27	Zener, HZS5.6NB2
ZD502	48T62934F25	Zener, CP. RD6.2MB2

Coils

Symbol No.	Part No.	Description
L801	25T52199F01	Choke
L802	24T16271W13	220μH
L803	24T16271W13	220μH

Thermistor / Crystal

Symbol No.	Part No.	Description
TH501	48T93439F06	Thermistor, 100K ohm
X501	91T15285W01	CER., Lock 4.19MHz

Symbol No.	Part No.	Description
Capacitors		
C101	08S65128F76	CP., 0.1μF
E101	23T25149W13	ELY., 100μF / 10V
E102	23T25149W09	ELY., 10μF / 16V
E103	23T25149W09	ELY., 10μF / 16V
E104	23T74437F32	TAN., 10μF / 16V
C105	08S65128F63	CP., 3300pF
E105	23T25149W07	ELY., 3.3μF / 50V
C106	08S65128F63	CP., 3300pF
C107	08S65128F35	CP., 100pF
E107	23T74437F32	TAN., 10μF / 16V
C108	08S65128F69	CP., 0.01μF
E108	23T25149W12	ELY., 47μF / 16V
C109	08S65128F69	CP., 0.01μF
E109	23T25149W12	ELY., 47μF / 16V
C110	08S65128F69	CP., 0.01μF
C111	08S65128F57	CP., 1000pF
C113	08T15399W01	CP., 0.022μF
C114	08S65128F64	CP., 3900pF
C115	08T15807W05	CP., 0.1μF
C116	08S65128F43	CP., 220pF
C117	08S65128F62	CP., 2700pF
E117	23T25149W04	ELY., 0.47μF / 50V
C118	08T15399W03	CP., 0.047μF
E118	23T74437F32	TAN., 10μF / 16V
C119	08S65128F29	CP., 56pF
E119	23T74437F32	TAN., 10μF / 16V
C120	08S65128F69	CP., 0.01μF
E120	23T25149W09	ELY., 10μF / 16V
C121	08S65128F13	CP., 12pF
E121	23T25149W09	ELY., 10μF / 16V
C122	08S53332F47	CP., 0.01μF
C123	08T15807W05	CP., 0.1μF
C124	08S65128F07	CP., 5pF
E125	23T74437F32	TAN., 10μF / 16V
C126	08T15807W05	CP., 0.1μF
E126	23T74437F32	TAN., 10μF / 16V
C127	08T15807W05	CP., 0.1μF
E127	23T25149W09	ELY., 10μF / 16V
E128	23T74437F32	TAN., 10μF / 16V
C129	08S65128F69	CP., 0.01μF
C130	08S65128F65	CP., 4700pF
C131	08T15399W03	CP., 0.047μF
C132	08T15399W03	CP., 0.047μF
C140	08S65128F65	CP., 4700pF
C141	08T15807W05	CP., 0.1μF
C142	08S65128F60	CP., 1800pF
C143	08S65128F69	CP., 0.01μF
E150	23T74437F32	TAN., 10μF / 16V
C190	08S65128F69	CP., 0.01μF
E502	23T25149W09	ELY., 10μF //16V

Symbol No.	Part No.	Description
C503	08T15807W05	CP., 0.1μF
E503	23T25149W09	ELY., 10μF / 16V
C504	08S53332F57	CP., 0.1μF
E504	23S61523F12	ELY., 10μF / 16V
C505	08T15807W01	CP., 0.047μF
C506	08T15807W01	CP., 0.047μF
E506	23T25149W15	ELY., 4.7μF / 35V
C507	08S65128F35	CP., 100pF
C508	08S65128F51	CP., 470pF
C509	08T15807W01	CP., 0.047μF
C510	08S65128F49	CP., 390pF
E510	23T25149W12	ELY., 47μF / 16V
E511	23T25149W09	ELY., 10μF / 16V
C520	08S65128F76	CP., 0.1μF
C521	08S65128F76	CP., 0.1μF
C522	08S65128F69	CP., 0.01μF
C523	08S65128F69	CP., 0.01μF
C524	08S65128F69	CP., 0.01μF
C703	08S65128F69	CP., 0.01μF
C704	08S65128F69	CP., 0.01μF
C801	08S53332F57	CP., 0.1μF
E801	23T25364W01	ELY., 1000μF / 16V
C802	08T15399W03	CP., 0.047μF
E802	23T74437F32	TAN., 10μF / 16V
C803	08T15399W03	CP., 0.047μF
E803	23T16086W01	ELY., 220μF / 10V
E804	23T16086W01	ELY., 220μF / 10V
C805	08S65128F56	CP., 820pF
E805	23T16086W02	ELY., 330μF / 6.3V
C806	08T15807W05	CP., 0.1μF
E806	23T16086W02	ELY., 330μF / 6.3V
C807	08S53332F57	CP., 0.1μF
E807	23T25149W09	ELY., 10μF / 16V
C808	08S65128F76	CP., 0.1μF
E808	23T16086W02	ELY., 330μF / 6.3V
E810	23T16086W02	ELY., 330μF / 6.3V
E811	23T16086W02	ELY., 330μF / 6.3V
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R101	06S64995F73	6.8K ohm
R102	06S64996F18	470K ohm
R103	06S64995F39	270 ohm
R105	06S64995F89	33K ohm
R106	06S64995F85	22K ohm
R107	06S64996F10	220K ohm
R108	06S64996F02	100K ohm
R109	06S64995F83	18K ohm
R110	06S64995F57	1.5K ohm
R111	06S64995F83	18K ohm

Symbol No.	Part No.	Description
R112	06S64995F91	39K ohm
R113	06S64995F53	1K ohm
R114	06S64996F10	220K ohm
R115	06S64995F77	10K ohm
R116	06S64995F93	47K ohm
R117	06S64996F30	2.2M ohm
R118	06S64995F89	33K ohm
R119	06S64995F95	56K ohm
R120	06S64995F77	10K ohm
R121	06S64995F87	27K ohm
R122	06S64995F63	2.7K ohm
R123	06S64996F12	270K ohm
R124	06S64995F83	18K ohm
R125	06S64996F02	100K ohm
R126	06S64995F77	10K ohm
R127	06S64996F04	120K ohm
R128	06S64996F02	100K ohm
R129	06S64995F81	15K ohm
R130	06S64995F85	22K ohm
R131	06S64995F77	10K ohm
R132	06S64995F77	10K ohm
R133	06S64995F77	10K ohm
R134	06S64996F20	560K ohm
R135	06S64996F06	150K ohm
R136	06S64995F61	2.2K ohm
R137	06S64995F77	10K ohm
R138	06S64995F69	4.7K ohm
R139	06S64995F69	4.7K ohm
R140	06S64995F69	4.7K ohm
R141	06T70072F05	10 ohm 1/4W
R144	06S64995F53	1K ohm
R145	06S64995F47	560 ohm
R146	06S64995F81	15K ohm
R147	06S64995F97	68K ohm
R148	06S64995F85	22K ohm
R149	06S64995F77	10K ohm
R150	06S64995F77	10K ohm
R151	06S64995F85	22K ohm
R152	06S64995F85	22K ohm
R153	06S64995F77	10K ohm
R154	06S64995F77	10K ohm
R155	06S64995F85	22K ohm
R156	06S64995F85	22K ohm
R157	06S64995F77	10K ohm
R158	06S64995F77	10K ohm
R159	06S64995F85	22K ohm
R160	06S64995F85	22K ohm
R161	06S64995F77	10K ohm
R162	06S64995F77	10K ohm
R163	06S64995F85	22K ohm
R166	06T70072F05	10 ohm 1/4W
R167	06S64996F04	120K ohm

Symbol No.	Part No.	Description
R168	06T70072F05	10 ohm 1/4W
R179	06S64995F43	390 ohm
R180	06S64995F77	10K ohm
R181	06S64996F02	100K ohm
R183	06S64996F10	220K ohm
R185	06S64995F83	18K ohm
R186	06S64995F53	1K ohm
R187	06S64995F53	1K ohm
R188	06S64995F65	3.3K ohm
R189	06S64996F18	470K ohm
R190	06S64995F93	47K ohm
R191	06S64995F85	22K ohm
R192	06S64995F77	10K ohm
R194	06S64995F53	1K ohm
R195	06S64995F53	1K ohm
R196	06S64995F53	1K ohm
R197	06S64995F45	470 ohm
R198	06S64996F14	330K ohm
R501	06S64995F83	18K ohm
R502	06S64995F53	1K ohm
R503	06S64996F02	100K ohm
R504	06S64995F89	33K ohm
R505	06S64996F10	220K ohm
R506	06S64995F35	180 ohm
R507	06S64995F93	47K ohm
R508	06S64995F93	47K ohm
R509	06S64995F89	33K ohm
R510	06S64995F45	470 ohm
R511	06S64995F89	33K ohm
R512	06S64995F93	47K ohm
R513	06S64995F55	1.2K ohm
R514	06S64996F26	1M ohm
R515	06S64996F02	100K ohm
R516	06S64996F02	100K ohm
R517	06S64996F10	220K ohm
R518	06S64996F02	100K ohm
R519	06S64995F93	47K ohm
R520	06S64995F93	47K ohm
R521	06S64995F93	47K ohm
R522	06S64995F93	47K ohm
R523	06S64995F93	47K ohm
R524	06S64995F93	47K ohm
R525	06S64995F93	47K ohm
R526	06S64995F93	47K ohm
R527	06S64996F22	680K ohm
R528	06S64996F26	1M ohm
R529	06S64996F18	470K ohm
R530	06S64995F77	10K ohm
R531	06S64995F83	18K ohm
R532	06S64995F77	10K ohm
R533	06S64995F85	22K ohm
R535	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R536	06S64995F93	47K ohm
R537	06T70072F65	3.3K ohm 1/4W
R538	06S64995F53	1K ohm
R539	06S64996F18	470K ohm
R540	06S64995F53	1K ohm
R541	06S64995F93	47K ohm
R542	06S64995F85	22K ohm
R543	06S64995F93	47K ohm
R550	06S64995F69	4.7K ohm
R551	06S64995F93	47K ohm
R560	06S64995F89	33K ohm
R561	06S64995F77	10K ohm
R562	06T70072F53	1K ohm 1/4W
R563	06S64995F59	1.8K ohm
R570	06T70072F45	470 ohm 1/4W
R571	06S64995F77	10K ohm
R572	06T70072F37	220 ohm 1/4W
R580	06S64995F77	10K ohm
R581	06S64995F77	10K ohm
R582	06S64995F61	2.2K ohm
R583	06S64995F63	2.7K ohm
R584	06S64995F63	2.7K ohm
R590	06T70072F90	1 ohm 1/4W
R591	06T70072F90	1 ohm 1/4W
R701	06S64995F75	8.2K ohm
R702	06S64995F77	10K ohm
R703	06S64995F77	10K ohm
R704	06S64995F75	8.2K ohm
R705	06S64995F77	10K ohm
R706	06S64995F77	10K ohm
R707	06S64995F75	8.2K ohm
R709	06S64995F77	10K ohm
R710	06S64995F77	10K ohm
R711	06S64995F75	8.2K ohm
R713	06S64995F77	10K ohm
R714	06S64995F77	10K ohm
R801	06S64995F89	33K ohm
R802	06S64995F53	1K ohm
R803	06S64995F67	3.9K ohm
R804	06S64995F89	33K ohm
R805	06S64995F77	10K ohm
R806	06T70072F41	330 ohm 1/4W
R807	06T70072F45	470 ohm 1/4W
R808	06T70072F45	470 ohm 1/4W
R809	06T70072F41	330 ohm 1/4W
R810	06S64995F58	1.6K ohm
R811	06S64995F69	4.7K ohm
R812	06S64995F01	4.7 ohm
R815	06S64995F77	10K ohm
R820	06T70072F90	1 ohm 1/4W
R821	06T70072F90	1 ohm 1/4W
VR101	18T91059F19	Variable, 100K ohm
VR102	18T91059F09	Variable, 2.2K ohm
VR103	18T91059F09	Variable, 2.2K ohm

Audio P. C. Board

IC's

IC201	51T35105W01	SM5840CP
IC202	51T80475F01	TC74HCU04P
IC203	51T35201W01	PCM63P
IC204	51T35201W01	PCM63P
IC205	51T25154W02	BA15532
IC206	51T25154W02	BA15532
IC207	51T25154W02	BA15532
IC208	51T25154W02	BA15532

Transistors

Q201	48T82763F03	DTC124EL
Q202	48T82762F03	DTA124EL
Q211	48T90183F03	2SD1996
Q212	48T90183F03	2SD1996

Diodes

D201	48T68828F01	1SS133
D202	48T68828F01	1SS133
D801	48T68580F02	DSA3A4

Switch

S201	40T25473W02	Slide, SSSF1 (DIGITAL OUT ON/OFF)

Coils / Crystal

T201	25T92419F01	TRANS., PT-10
L201	24T50508F38	Inductor, 220μH
X201	91T25773W92	Crystal, 16.9344MHz

Capacitors

E201	23T74437F34	TAN., 22μF / 16V
C202	21C45322G10	CER., 10pF
E202	23T00181L17	ELY., 33μF / 16V
C203	21S40655F11	CER., 10pF

Symbol No.	Part No.	Description
E203	23T00181L17	ELY., 33μF/16V
C205	08T25620W01	CER., 0.47μF
E206	23T00181L25	ELY., 22μF/25V
C211	08T35388W09	TF, 2200pF
E211	23T25149W09	ELY., 10μF/16V
C212	08T35388W09	TF, 2200pF
E212	23T25149W09	ELY., 10μF/16V
C213	08T00152L15	PP., 3300pF
E213	23T25149W09	ELY., 10μF/16V
C214	08T00152L15	PP., 3300pF
E214	23T25149W09	ELY., 10μF/16V
C215	08T00152L15	PP., 3300pF
E215	23T25149W09	ELY., 10μF/16V
C216	08T00152L15	PP., 3300pF
E216	23T25149W09	ELY., 10μF/16V
C217	08T00152L15	PP., 3300pF
E217	23T25149W09	ELY., 10μF/16V
C218	08T00152L15	PP., 3300pF
E218	23T25149W09	ELY., 10μF/16V
E219	23T00181L09	ELY., 100μF/10V
C220	21S40655F19	CER., 47pF
E220	23T00181L09	ELY., 100μF/10V
C221	21S40655F19	CER., 47pF
C222	21S40655F22	CER., 82pF
C223	21C45322G20	CER., 68pF
C224	21S40655F22	CER., 82pF
E225	23T25149W15	ELY., 4.7μF/35V
E226	23T25149W15	ELY., 4.7μF/35V
E227	23T25149W15	ELY., 4.7μF/35V
C228	21S40655F22	CER., 82pF
E228	23T25149W15	ELY., 4.7μF/35V
C229	08S40805F19	CER., 0.01μF
E229	23T00181L44	ELY., 10μF/50V
C230	08S40805F19	CER., 0.01μF
E230	23T00181L44	ELY., 10μF/50V
E231	23T25149W15	ELY., 4.7μF/35V
C232	21C45322G10	CER., 10pF
E232	23T25149W15	ELY., 4.7μF/35V
C233	21C45322G30	CER., 4700pF
E233	23T25149W15	ELY., 4.7μF/35V
C234	21C45322G30	CER., 4700pF
E234	23T25149W15	ELY., 4.7μF/35V
C235	21C45322G30	CER., 4700pF
C236	21C45322G30	CER., 4700pF
C237	08T52714F01	CER., 1000pF
E240	23S65123F12	ELY., 10μF/16V
E241	23T00181L26	ELY., 47μF/25V
E242	23T00181L26	ELY., 47μF/25V

Symbol No.	Part No.	Description
Miscellaneous		
BA801	60T91060F01	Battery, LIT. CR2032-HE2
ET201	01T35186W01	Assy., DIN-RCA Connector
JK201	09T84775F01	Plate, PH (Digital Output)
HD101	88T15309W01	Pick-Up Unit SF-87.5
LD101	48T16057W01	LED, AN501 (RED)
LD102	48T16057W02	LED, AN501-B1 (RED)
LD103	48T16057W02	LED, AN501-B1 (RED)
M101	59T90879F01	Motor, Load 6V-260mA (LOADING)
M102	59T15716W01	Motor, Load 8V-85mA (ELEVATOR)
M103	59T52973F03	Motor, Servo 6V-210mA (SLED)
PI101	48T15722W01	Interrupter, Photo GP1S51
PT101	48T15938W01	TR., Photo PS502
PT102	48T15938W01	TR., Photo PS502
PT103	48T15938W01	TR., Photo PS502
S101	40T70366F01	Switch, Tact KHL10906 (EJECT)
S102	40T71025F01	Switch, Detector (LOADING)
S103	40T71025F01	Switch, Detector (HOME)
S104	40T71025F01	Switch, Detector (MAGAZINE)
S105	40T71025F01	Switch, Detector (LIMIT)

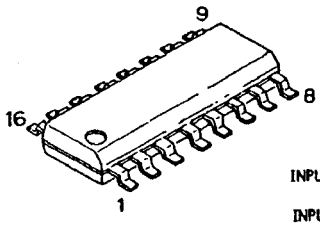
Cabinet Assembly Parts List

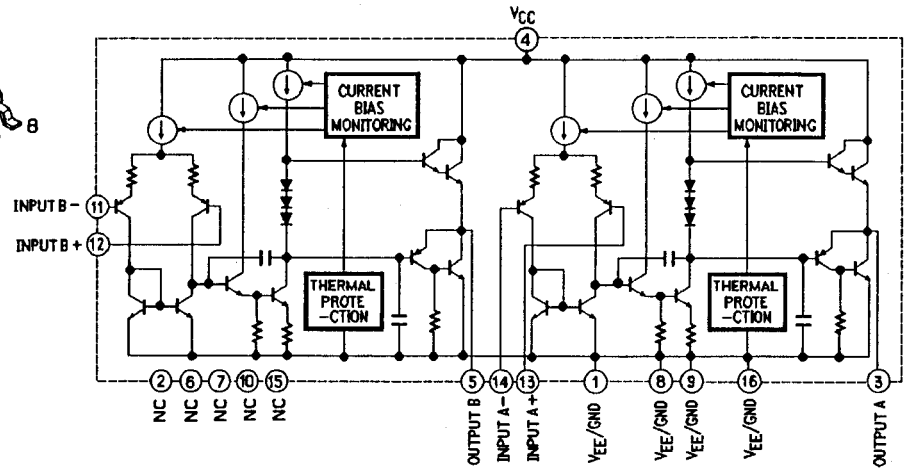
NOTE : The parts without parts list are not supplied.

Symbol No.	Index	Part No.	Description
1	3-A	13T35250W01	Assy., Front Escutcheon
3	1-A	15D22218W04	Cover, Top
4	1-A	15B22213W04	Cover, Plate (L)
5	3-B	15B22214W04	Cover, Plate (R)
6		15B22423W01	Holder, Damper (B)
7	3-F	04A11427W01	Washer, Damper
8		04A28003W01	Spacer, Damper
9	3-C	64B12370W01	Assy., Plate Inner
13	3-F	84T35118W01	Flexible P.C.Board
15	4-E	05B41635J04	Rivet Push
16	2-C	41B11514W01	Spring, Extension
17	4-F	03S94385F17	Screw, Pan (M2.6×6)
18		03S94385F15	Screw, Pan (M2.6×4)
19		03S44205G34	Screw, Pan (M2.6×5)
20		03D40121T41	Screw, W/Double Washer (M3×6)
21		03A13419W04	Screw, Transport (M4×21.5)
22	4-E	03A38056W01	Screw, Special (M2.6×6)
23	4-C	03S44205G98	Screw, Pan (M2.6×5)
24		03S40036U11	Screw, Pan (M3×8)
25	2-B	03S44205G05	Screw, Pan (M3×5)
27		75A28002W01	Damper, DR (B)
32		03S68555F04	Screw, Pan (M2.6×6)
33	2-H	03S70494F10	Screw, Pan (M2.6×10)
38	3-F	14S32186W06	Insulator, Cover
39	1-E	01T45064W01	Assy., Shield Wire

Symbol No.	Index	Part No.	Description

TCA0372M : IC103, 104, 701, 702





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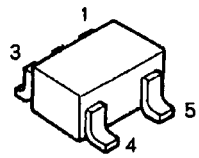

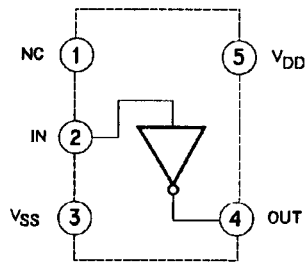

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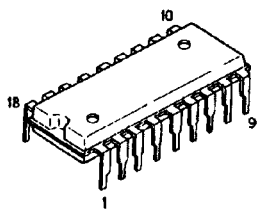

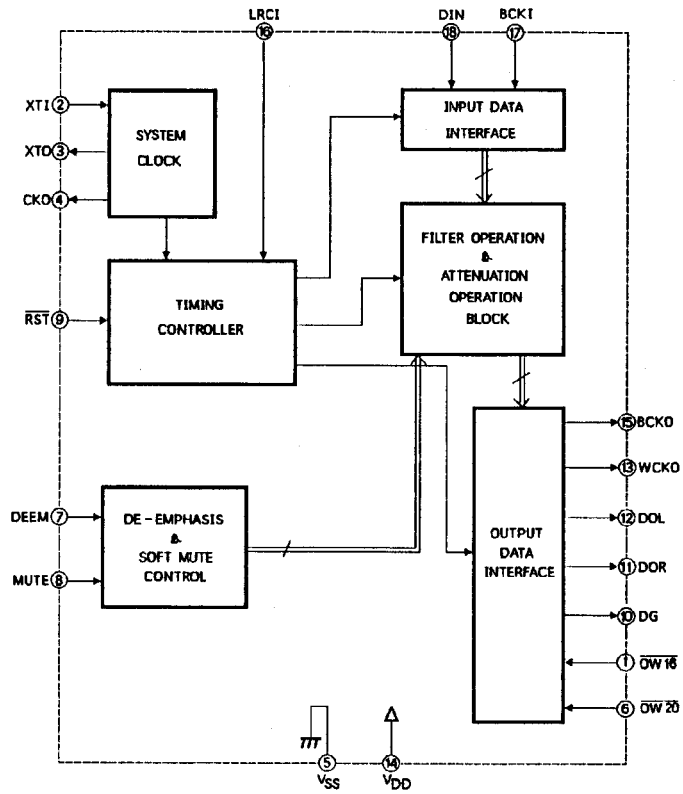

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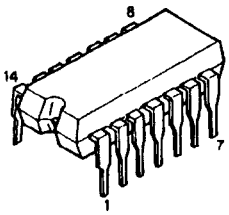
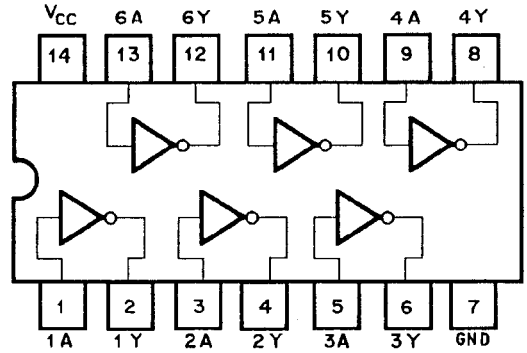
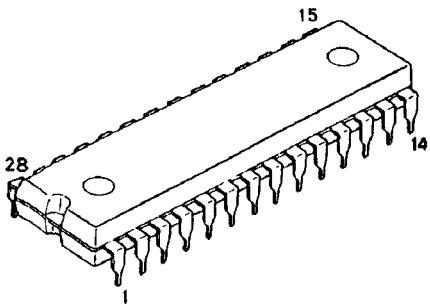
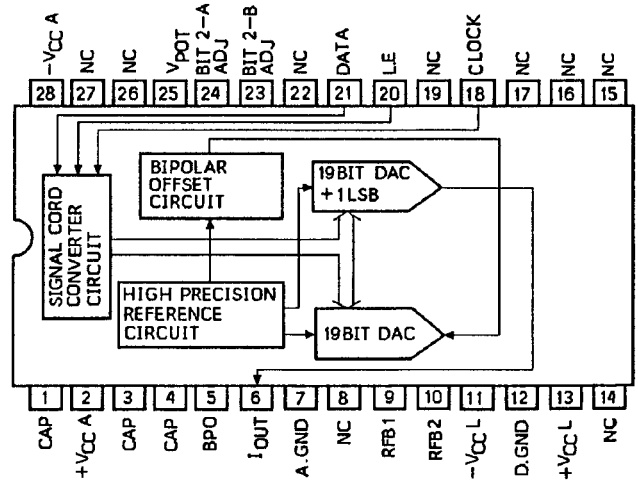


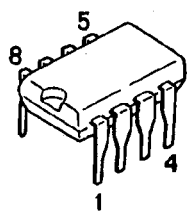


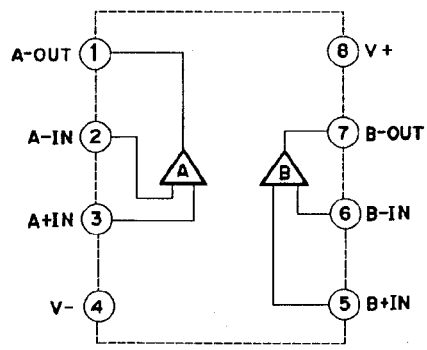
PCM63P : IC203, 204



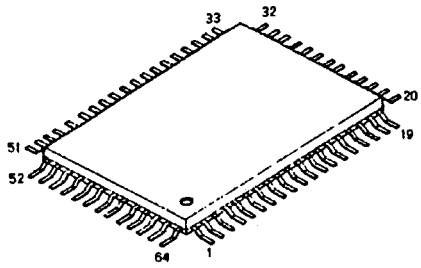

-VCC A NC NC VPOT BIT 2-A ADJ BIT 2-B ADJ NC DATA LE NC CLOCK NC NC NC
28 27 26 25 24 23 22 21 20 19 18 17 16 15
BIPOLAR OFFSET CIRCUIT
19BIT DAC +1LSB
SIGNAL CORD CONVERTER CIRCUIT
HIGH PRECISION REFERENCE CIRCUIT
19BIT DAC
1 2 3 4 5 6 7 8 9 10 11 12 13 14
CAP +VCC A CAP CAP BPO IOUT A.GND NC RFB1 RFB2 -VCC L D.GND +VCC L NC

BA15532 : IC205~208



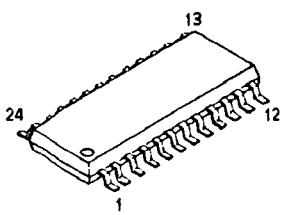


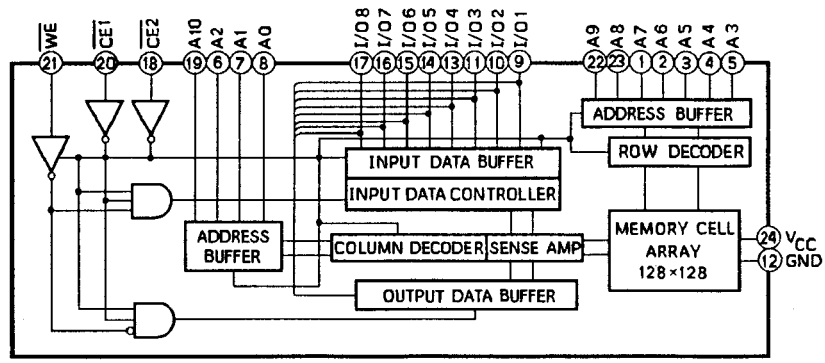
35253W01 : IC501



PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O
1	A5	O	23	HI TEMP	I	45	BUS 3	I/O
2	A4	O	24	EJE KEY	I	46	BUS 2	I/O
3	A3	O	25	IGN SW	I	47	BUS 1	I/O
4	A2	O	26	V_{SS}	—	48	BUS 0	I/O
5	A1	O	27	STB RELE	I	49	D8	I/O
6	A0	O	28	BATT SW	I	50	D7	I/O
7	$\overline{RESET}$	—	29	BUS IN	I	51	D6	I/O
8	X2	—	30	DISCP	I	52	D5	I/O
9	X1	—	31	DISCIN	I	53	D4	I/O
10	$\overline{WE}$	O	32	LOD SW	I	54	D3	I/O
11	$\overline{OE}$	O	33	DISC OK	I	55	D2	I/O
12	W OUT	I	34	$\overline{HMP\ SW}$	I	56	D1	I/O
13	F CONT	O	35	$\overline{MAG\ SW}$	I	57	V_{PP}	—
14	ELV M (+)	O	36	$\overline{LIM\ SW}$	I	58	V_{DD}	—
15	ELV M (−)	O	37	BUS OUT	O	59	$\overline{CE}$	O
16	LOD M (+)	O	38	$\overline{LSI\ RST}$	O	60	A10	O
17	LOD M (−)	O	39	BUCK	O	61	A9	O
18	LSI CONT	O	40	CCE	O	62	A8	O
19	MUTE	O	41	LO TEMP	I	63	A7	O
20	NC	—	42	DOUT SW	I	64	A6	O
21	VCONT	O	43	LOCK	—			
22	$\overline{LARM\ SW}$	I	44	GND	—			

LC3516AML / CXK5816M : IC502





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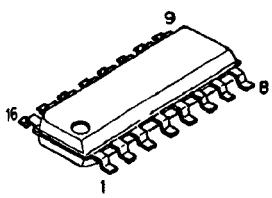

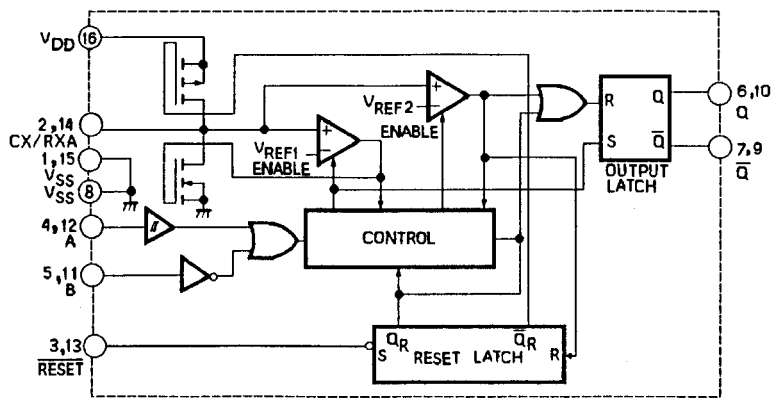

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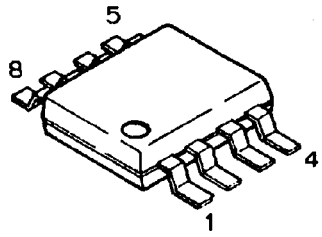

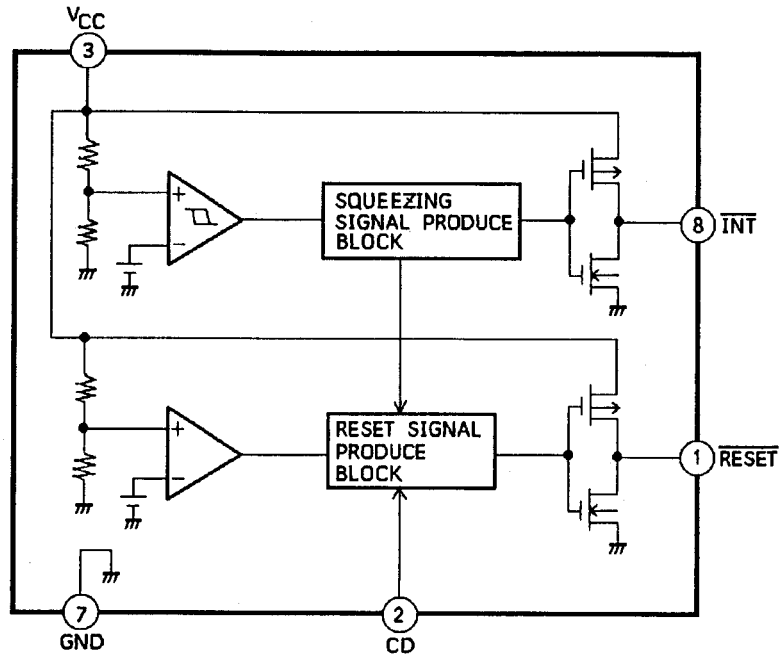

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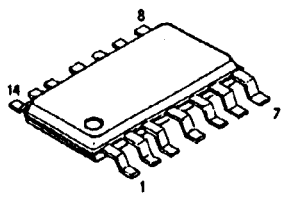

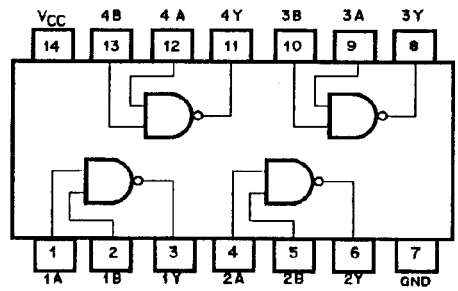

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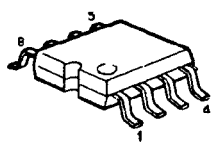

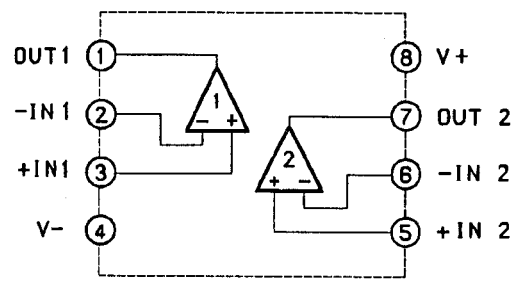

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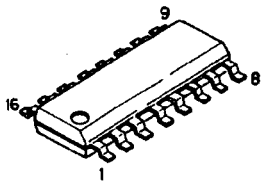

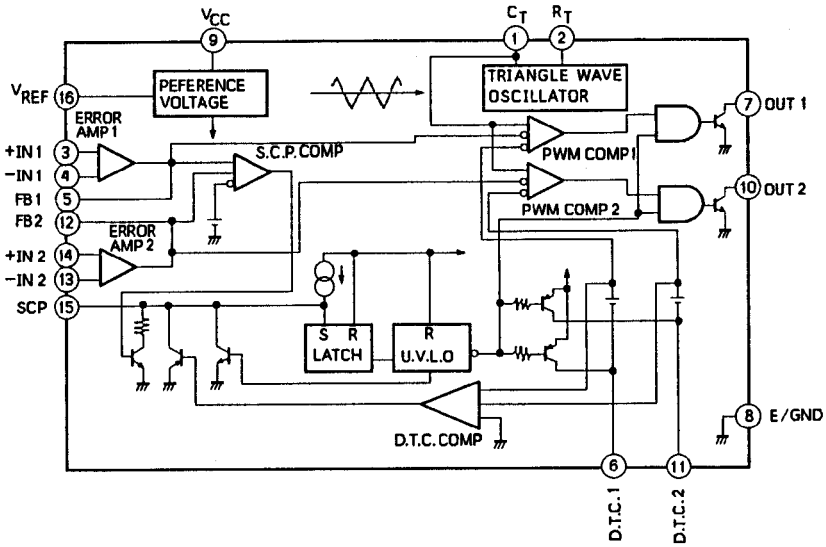

ALPINE ELECTRONICS INC.
Tokyo Office : 1-1-8 Nishi Gotanda
Shinagawa-ku, Tokyo, Japan 141
Phone 03 3494 1101 Telex 8927 61

ALPINE ELECTRONICS OF AMERICA, INC.
19145 Gramercy Place
Torrance, California 90501
Phone 213 326 8000

ALPINE ELECTRONICS OF CANADA, INC.
605 Alden RD Markham
Ontario L3R 3L5 Canada
Phone 416 475 7280 Telex 06 986789

ALPINE ELECTRONICS GmbH
Brandenburger Str. 2-4
4030 Ratingen F.R. Germany
Phone 001 49 2102 4550 Telex 8589157
Fax 001 49 2102 445321

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SERVICE MANUAL

CD Remote Changer Mechanism
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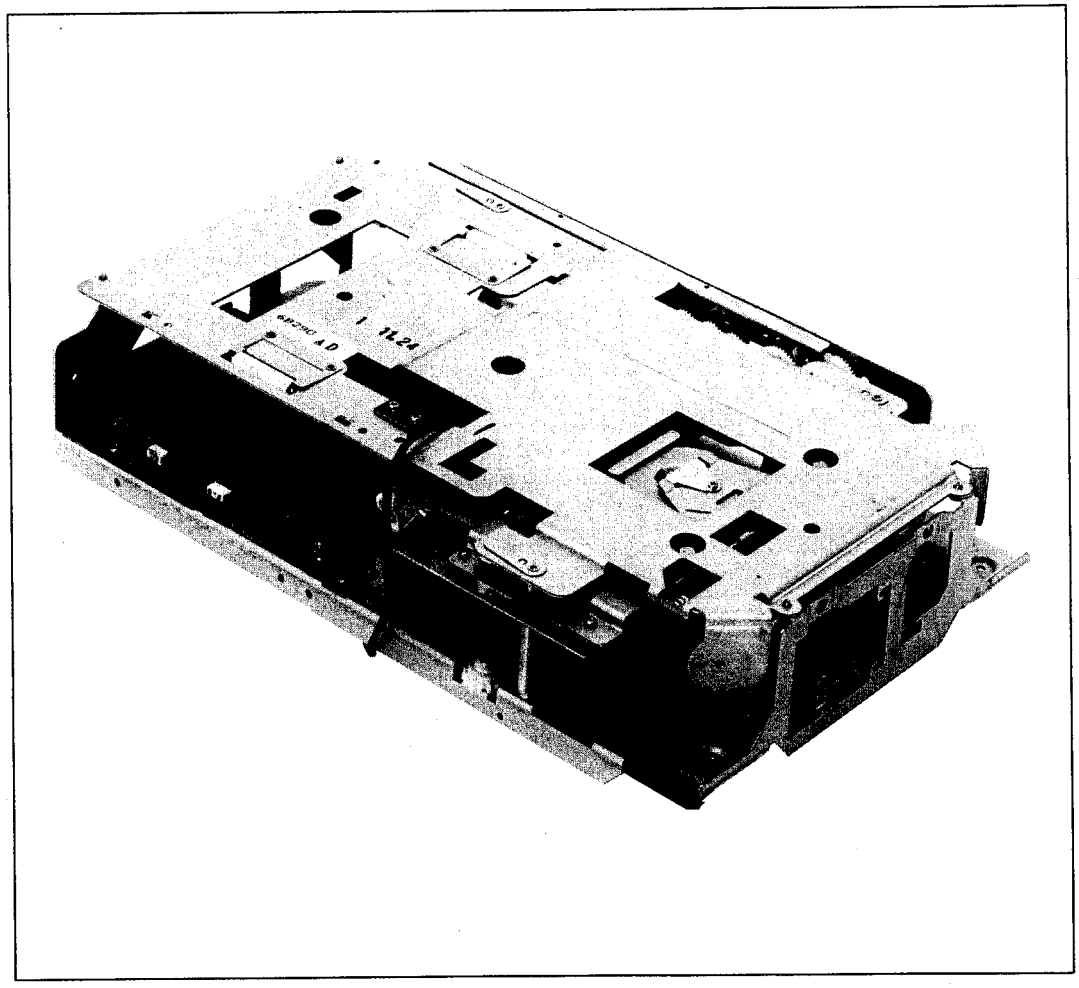
ADDENDUM & REVISED (II)



DR SERIES

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Disassembly Instructions

<DR24A010 Model Only>

1. **Removal of Pick-up Unit**
   (1)Remove three screws marked "O" as shown in Figure 1.
2. **Removal of Sled Motor**
   (1) After removal of the pick-up unit, remove the motor bracket with sled motor by removing the solder (A) and two screws marked "×" as shown in Figure 1.
   (2) Remove the solder (B) and a screw marked "□" as shown in Figure 1.
3. **Removal of Head Unit**
   (1) After removal of the motor bracket, remove the shaft bracket and the screw bracket by removing two screws marked "△" as shown in Figure 1.

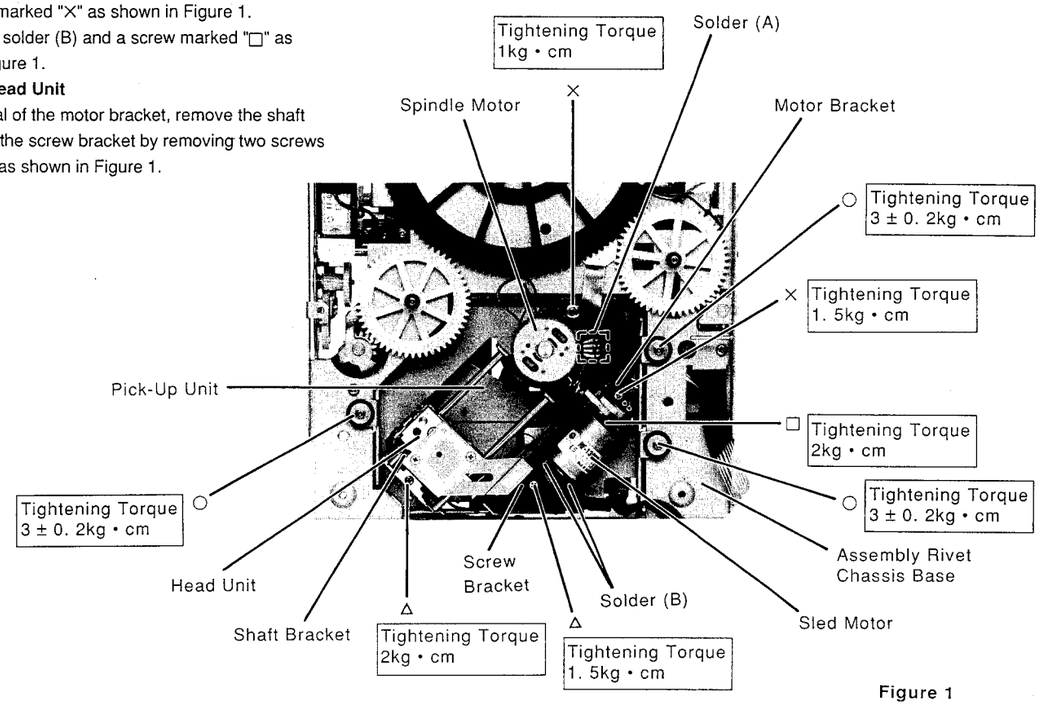


Figure 1

4. **Removal of LED P. C. Board**
   (1) Remove two screws marked "●" as shown in Figure 2.
5. **Removal of Switch P.C. Board**
   (1) Remove a screw marked "▲" as shown in Figure 2.
   (2) Remove the hook (A) as shown in Figure 2.

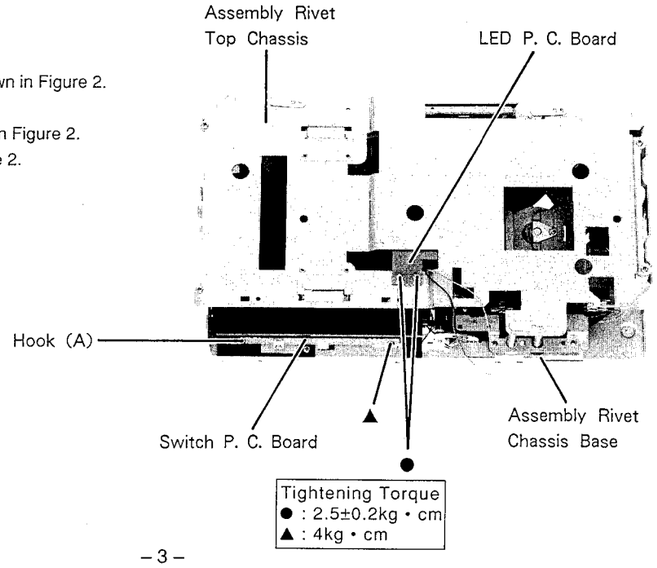


Figure 2

6. **Removal of Assembly Rivet Chassis CR**
   (1) After Remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 3.
7. **Removal of Photo P. C. Board**
   (1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 4.
   (2) Remove a screw marked "■" as shown in Figure 4.

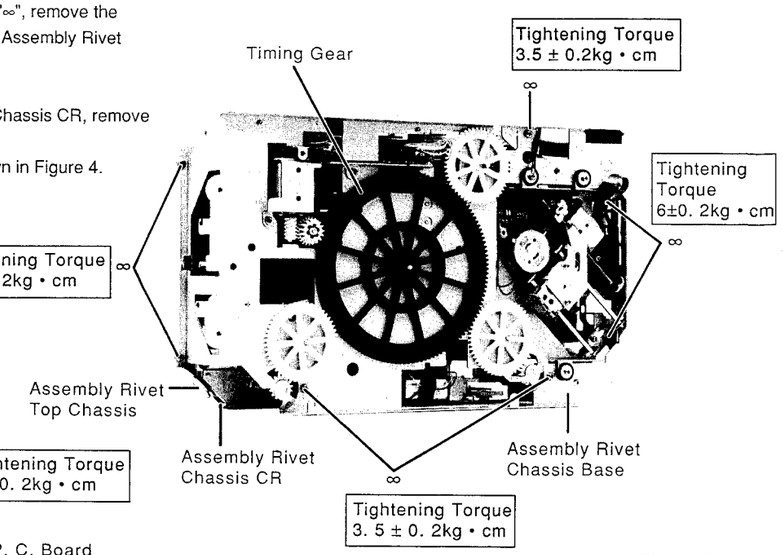


Figure 3

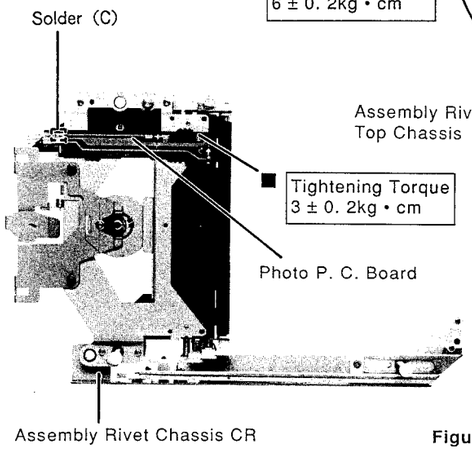


Figure 4

8. **Removal of Sensor P. C. Board**
   (1) After removal of the Assembly Rivet Chassis CR, remove the solder (D) and (E) as shown in Figure 5.
   (2) Remove two screws marked "☆" as shown in Figure 5.
9. **Removal of Loading Motor**
   (1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) as shown in Figure 5.
   (2) Remove two screws marked "★" as shown in Figure 5.

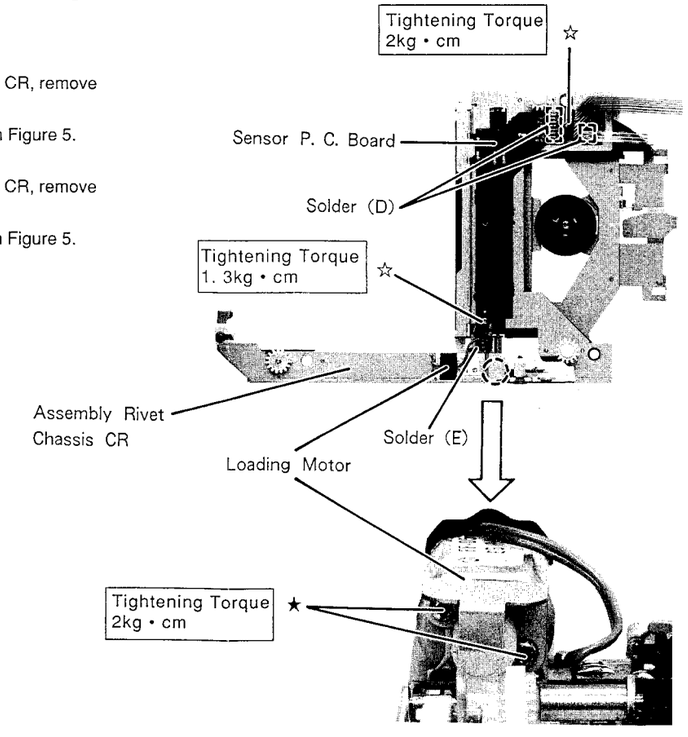


Figure 5

Bracket

Tightening Torque
3 ± 0. 2kg • cm

ghtening Torque
5kg • cm

ghtening Torque
‹g • cm

Tightening Torque
3 ± 0. 2kg • cm

Assembly Rivet
Chassis Base

d Motor

Figure 1

ivet
e

Figure 2

6. Removal of Assembly Rivet Chassis CR

(1) After Remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 3.

7. Removal of Photo P. C. Board

(1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 4.

(2) Remove a screw marked "■" as shown in Figure 4.

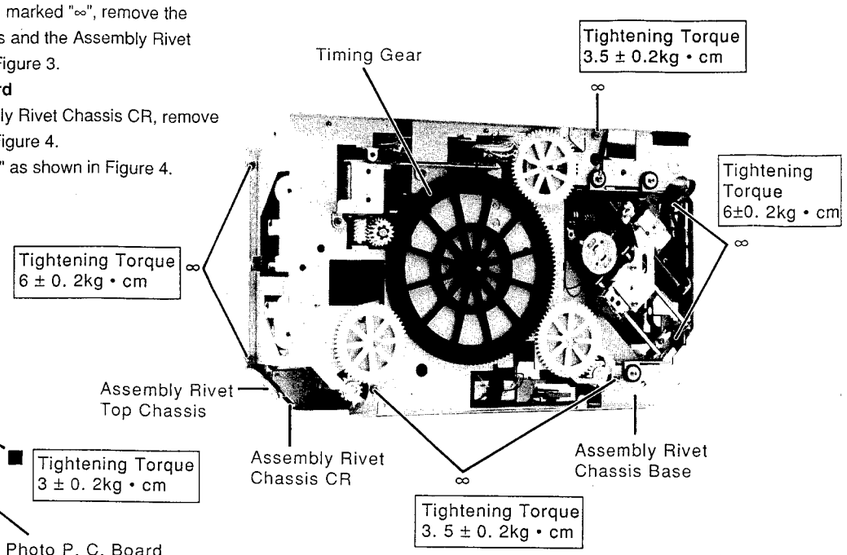


Figure 3

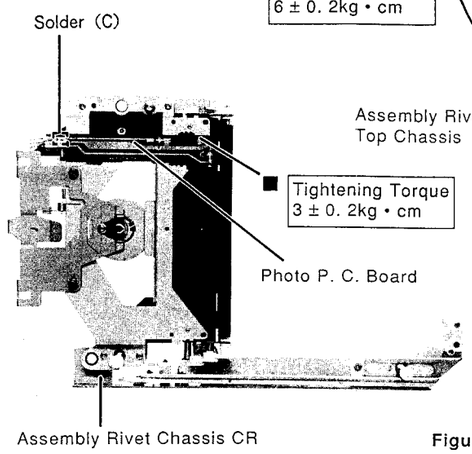


Figure 4

8. Removal of Sensor P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (D) and (E) as shown in Figure 5.

(2) Remove two screws marked "☆" as shown in Figure 5.

9. Removal of Loading Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) as shown in Figure 5.

(2) Remove two screws marked "★" as shown in Figure 5.

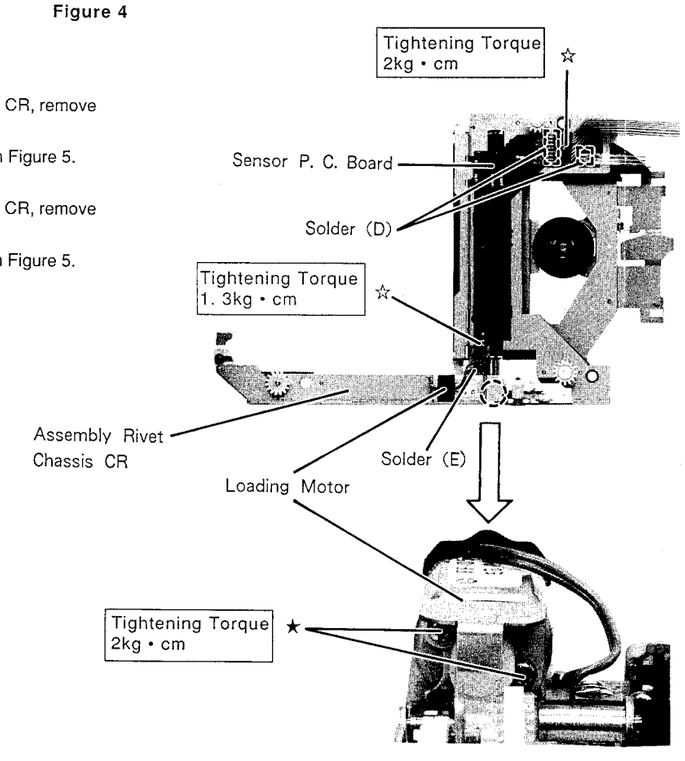


Figure 5

10. Removal of Elevator Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the washer (A) as shown in Figure 6.

(2) Remove the Assembly Rivet Bracket Motor by removing two screws marked "◇" as shown in Figure 6.

(3) Remove the solder (F) as shown in Figure 7.

(4) Remove tow screws marked "◆" as shown in Figure 6.

11. Removal of Interrupt P. C. Board

(1) After removal of the Assembly Rivet Bracket Motor, remove the solder (F) as shown in Figure 7.

(2) Remove two screws marked "#" as shown in Figure 7.

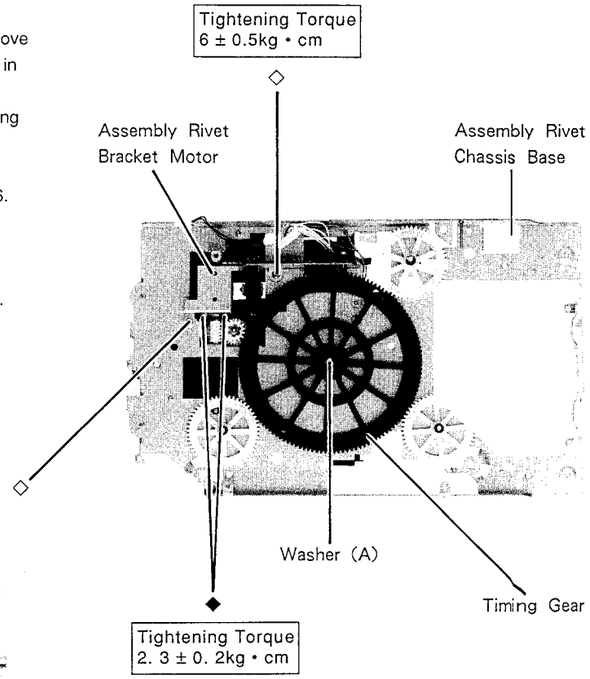


Figure 6

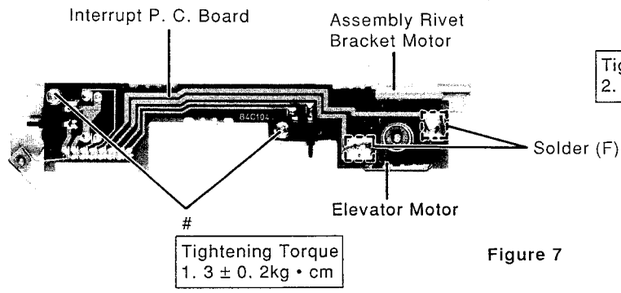


Figure 7

12. Removal of Magazine Photo P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the Assembly Rivet Chassis Magazine by removing three screws marked "※" as shown in Figure 8.

(2) Remove two screws marked "◎" as shown in Figure 8.

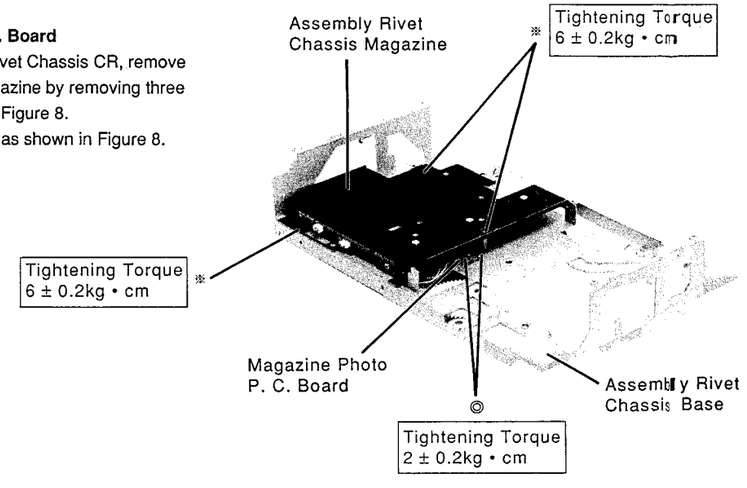


Figure 8

Disassembly Instructions

<DR24A020/02A/030/040 Model Only>

1. **Removal of Pick-Up Unit**
   (1) Remove three screws marked "○" as shown in Figure 9.
2. **Removal of Sled Motor**
   (1) After removal of the pick-up unit, remove the motor bracket with sled motor by removing the solder (A) and two screws marked "×" as shown in Figure 9.
   (2) Remove the solder (B) and a screw marked "□" as shown in Figure 9.
3. **Removal of Head Unit <DR24A020 Model Only>**
   (1) After removal of the motor bracket, remove the shaft bracket and the screw bracket by removing two screws marked "△" as shown in Figure 9.

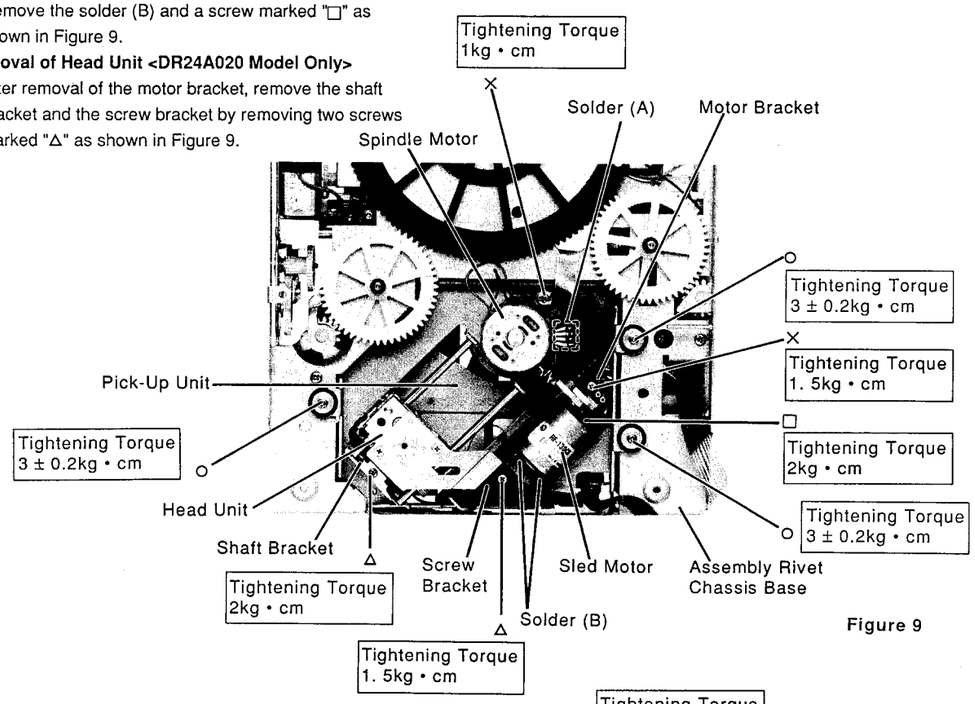


Figure 9

3. **Removal of Head Unit <DR24A02A/030/040 Model Only>**
   (1) After removal of the motor bracket remove the screw bracket by removing a screw marked "◉" as shown in Figure 10.
   (2) Remove four screws marked "⊗" and four shaft Stoppers as shown in Figure 10.

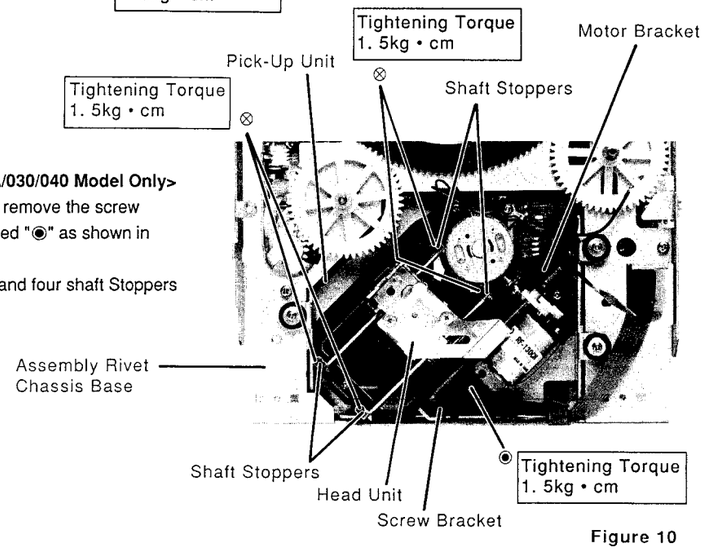


Figure 10

4. **Removal of Magazine Photo**
   (1) Remove a screw marked "●" as shown in Figure 11.
5. **Removal of Switch P. C. Board**
   (1) Remove a screw marked "▲" as shown in Figure 11.
   (2) Remove the Hook (A) as shown in Figure 11.

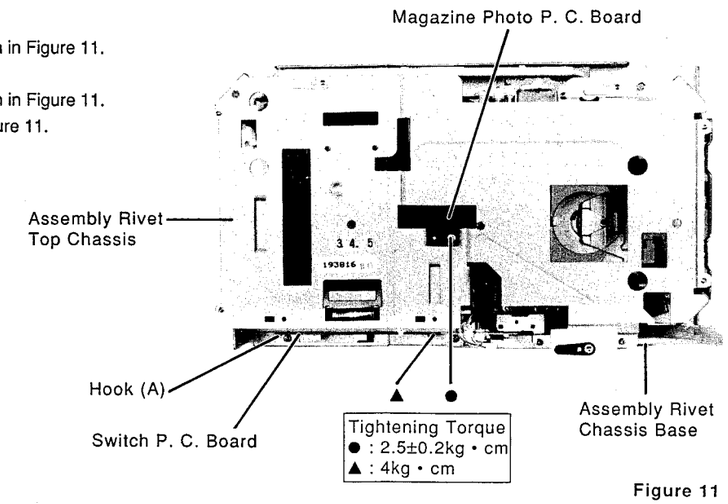


Figure 11

6. **Removal of Assembly Rivet Chassis CR**
   (1) After remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 12.
7. **Removal of LED P. C. Board**
   (1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 13.
   (2) Remove a screw marked "■" as shown in Figure 13.

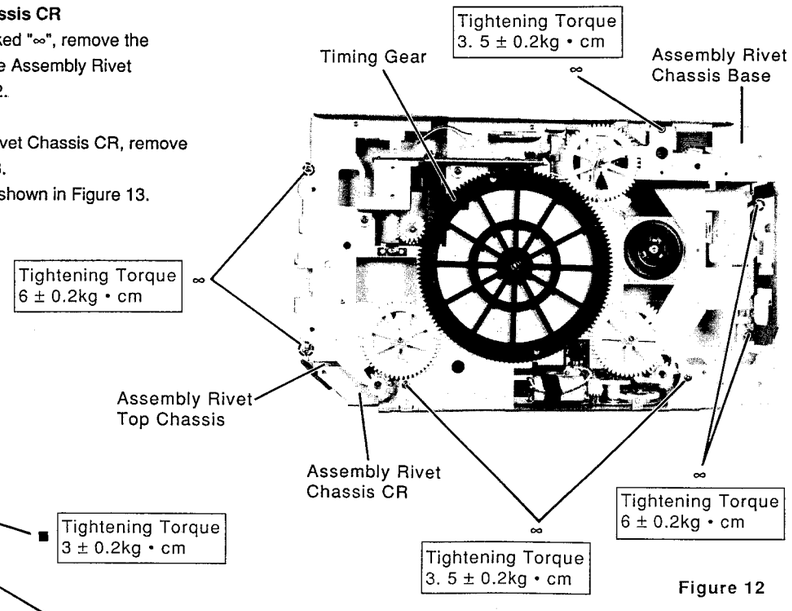


Figure 12

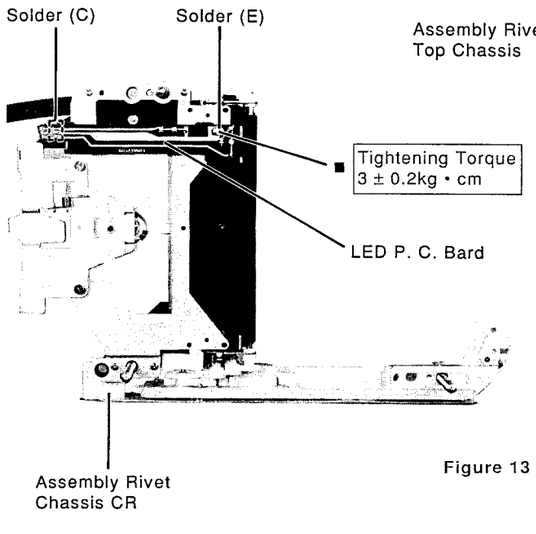


Figure 13

8. **Removal o**
   (1) After rem
   the solde
   (2) Remove
   "☆" as sl
   Note: When re
   damage
9. **Removal o**
   (1) After rem
   the solde
   (2) Remove

10. **Removal o**
    (1) After rem
    the timin
    Figure 15
    (1) After rem
    the timin
    Figure 15
    (2) Remove
    two scre
    (3) Remove
    (4) Remove

11. **Removal o**
    (1) After rem
    remove t
    (2) Remove

Tightening To
1. 3 ± 0.2kg •

#

Interrupt P. C.

4. Removal of Magazine Photo

(1) Remove a screw marked "●" as shown in Figure 11.

5. Removal of Switch P. C. Board

(1) Remove a screw marked "▲" as shown in Figure 11.

(2) Remove the Hook (A) as shown in Figure 11.

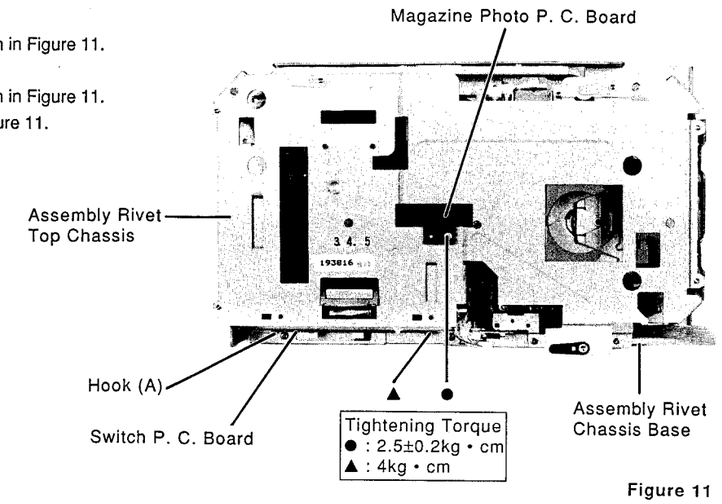


Figure 11

6. Removal of Assembly Rivet Chassis CR

(1) After remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 12.

7. Removal of LED P. C. Board

(1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 13.

(2) Remove a screw marked "■" as shown in Figure 13.

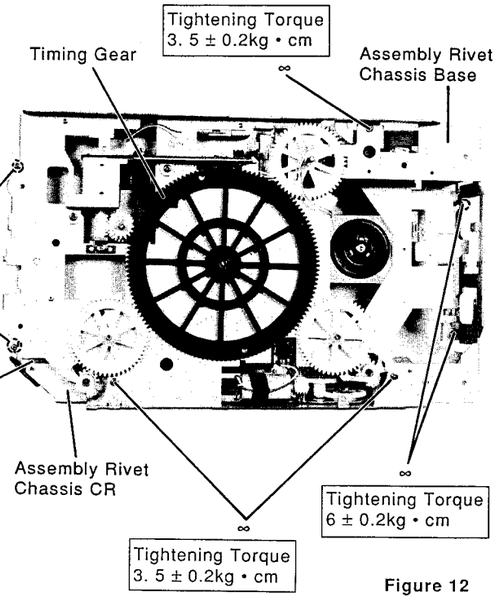


Figure 12

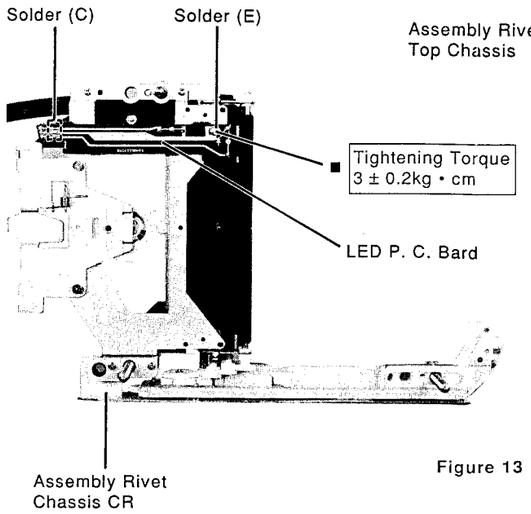


Figure 13

8. Removal of Sensor P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) and (F) as shown in Figure 14.

(2) Remove Elevator Screw Shaft and two screws marked "☆" as shown in Figure 14.

Note: When removing the sensor P. C. Board, be careful not to damage the Photo-Transistor.

9. Removal of Loading Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (F) as shown in Figure 14.

(2) Remove two screws marked "★" as shown in Figure 14.

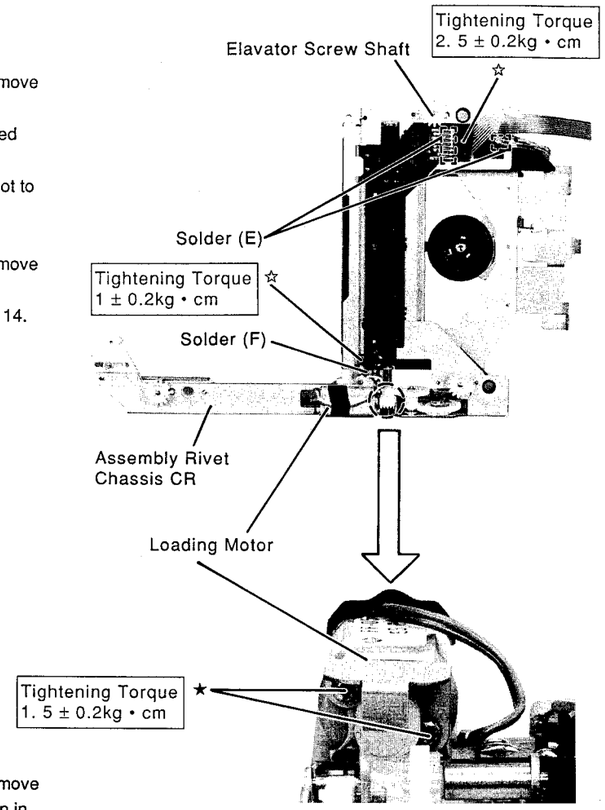


Figure 14

10. Removal of Elevator Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the washer (A) as shown in Figure 15. **<DR24A020/02A Model Only>**

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the Ring "E" as shown in Figure 15. **<DR24A030/040 Model Only>**

(2) Remove the Assembly Rivet Bracket Motor by removing two screws marked "◇" as shown in Figure 15.

(3) Remove the solder (G) as shown in Figure 16.

(4) Remove two screws marked "◆" as shown in Figure 15.

11. Removal of Interrupt P. C. Board

(1) After removal of the Assembly Rivet Bracket Motor, remove the solder (G) as shown in Figure 16.

(2) Remove two screws marked "#" as shown in Figure16.

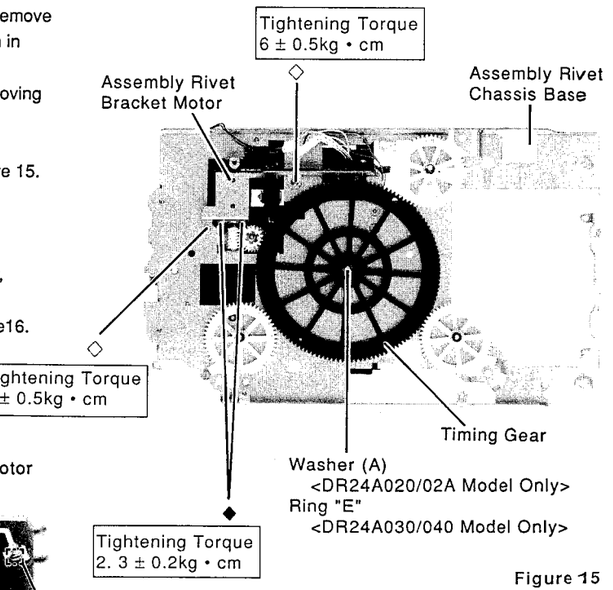


Figure 15

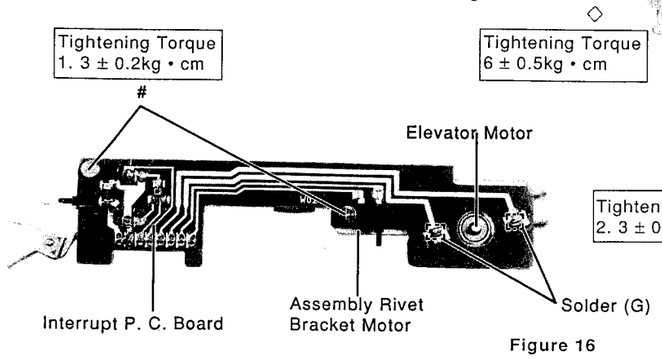


Figure 16

12. Removal of Magazine LED P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the Assembly Rivet Chassis Magazine by removing three screws marked "※" and the Hook (B) as shown in Figure 17.

(2) Remove a screw marked "◎" as shown in Figure 17.

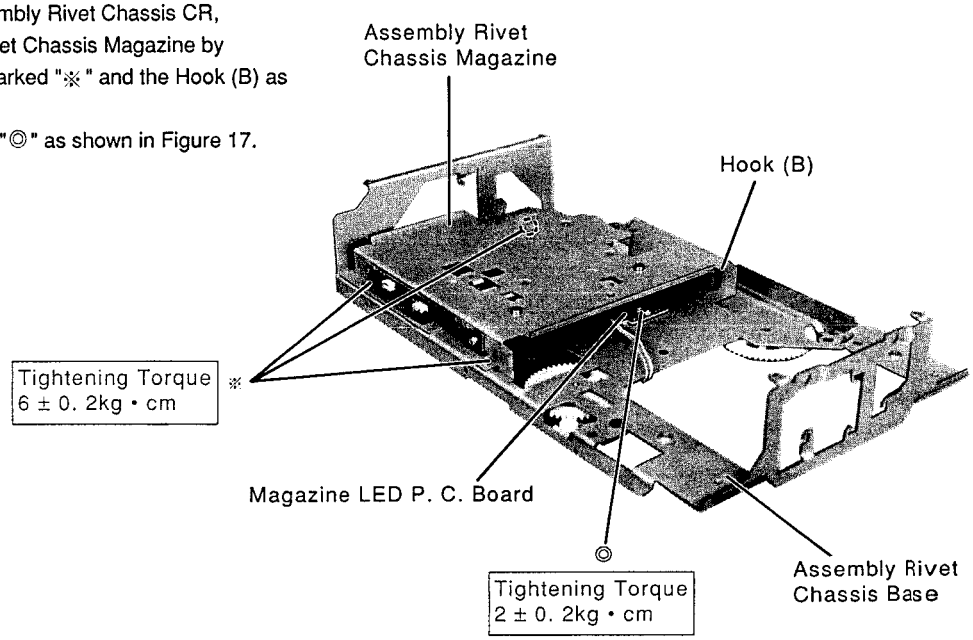


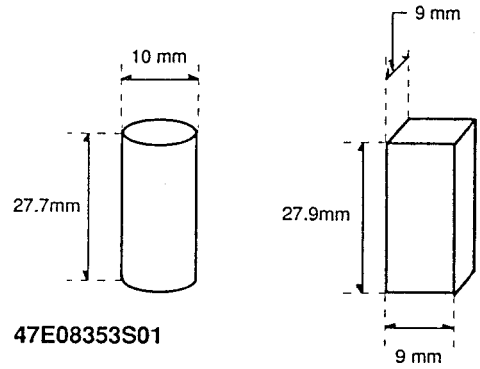
Figure 17

Adjusting method for Elevator Height

1. Remove two lock washers and a ring "E", than remove three gears (D).
2. Turn three gears (E) and move the CR chassis to F direction (to the position of CD magazine).
3. Insert the adjustment jig (☆) as shown in Figure 18 between the chassis and the CR chassis as shown in Figure 19.
   * At the same time, insert the adjustment jig near each of three gears (E).
4. Adjust each of gears (E) to minimum gap and to getting smooth moving of each adjustment jig.
5. Adjust the H hole of timing gear to fit with the hole of chassis.
6. Mount three gears (D).
   * At this time, pay attention that the position between the gear (E) adjusted and Timing gear does not make gap.
7. Fix three gears (D) with two lock washers and a ring "E".

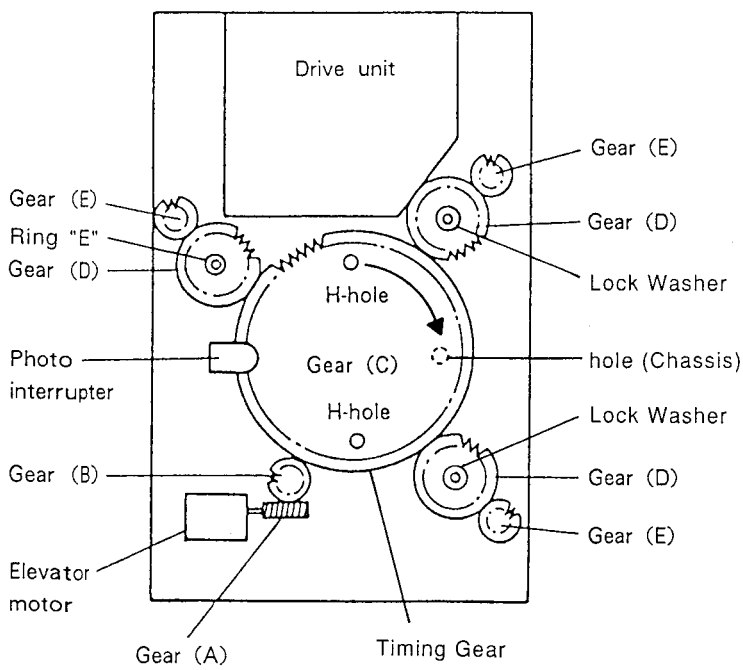
(☆) : 47E08353S01 (DR24A010 Model Only)
01V00346S01 (DR24A020/02A/030/040 Model Only)

Adjustment Jig



(Three pieces are supplied.)

Figure 18



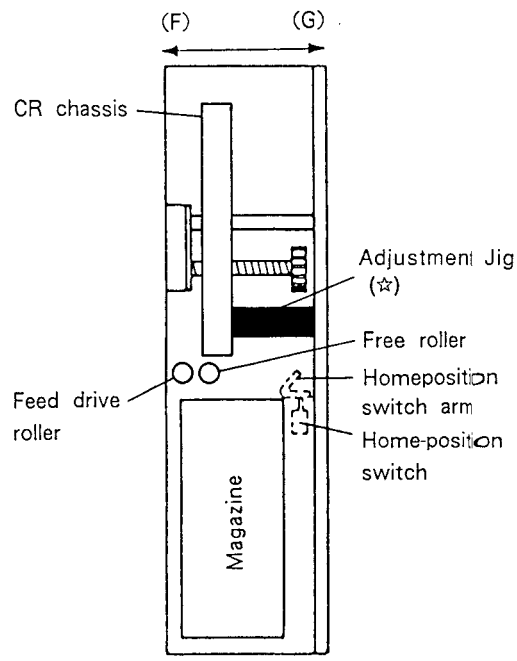


Figure 19

Mechanism Function Description

Function	Step	Description	Illustration
Magazine Insertion	①	When the magazine is inserted, the eject lever is pushed in.	Figure 20
	②	The eject lever causes the magazine lock arm to move.	
	③	The magazine lock arm causes the magazine to lock and the magazine lock switch to be switched on.	

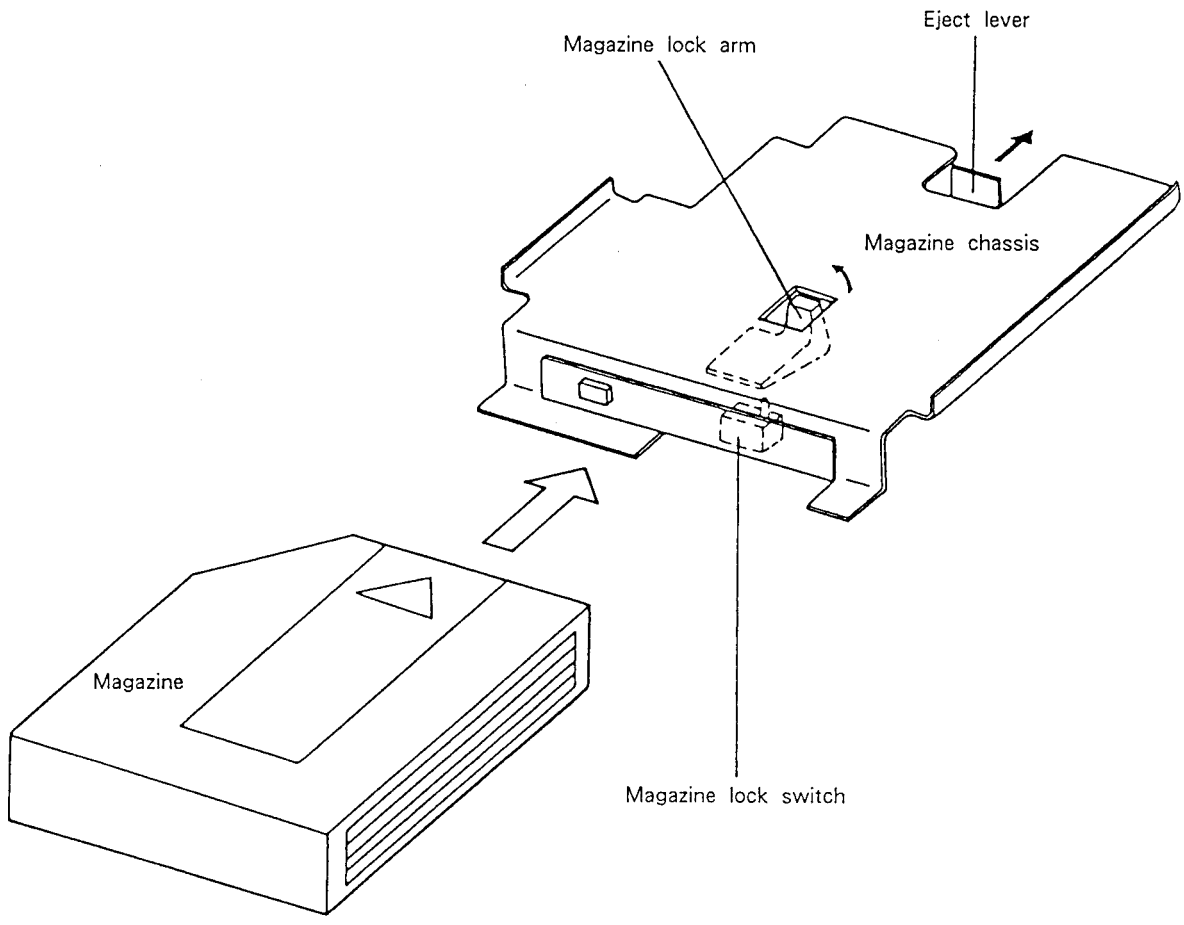


Figure 20

Function	Step	Description	Illustration
Disc Loading	①	The elevator motor rotates.	Figure 21
	②	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	③	The CR chassis is moved in the (F) direction by rotation of gear (E).	
	④	The photo-interrupter counts the H-holes on gear (C) to control the movement distance of the CR chassis.	
	⑤	The CR chassis is stopped at the position of the first disc in the magazine. * For the 2nd through 6th discs the movement distance of the CR chassis is the only thing that changes : the operation is the same.	
	⑥	The loading motor rotates. (The loading motor can rotate forward and in reverse.)	
	⑦	The rotation is transmitted to gears (I), (J), (K) and (L).	
	⑧	Simultaneous with the action of Step (7), the rotation is transmitted to gears (I), (J), (M), (N) and (O).	
	⑨	The rotation of gear (L) causes the disc eject lever to make a back-and-forth movement in the (P) and (Q) directions.	
	⑩	The disc eject lever causes the disc to be ejected from the magazine.	
	⑪	Since gear (O) and the feed drive roller are on the same axle, the rotation of gear (O) will cause the feed drive roller to rotate.	Figure 22
	⑫	The disc is sandwiched between the feed drive roller and the free roller and the disc moves in the direction of the clamper.	
	⑬	Photosensors (1), (2) and (3) are consecutively blocked by the disc and finally, only photosensor (3) is a blocked condition.	Figure 23
	⑭	The loading motor stops upon the judgment that the disc has entered.	
	⑮	The elevator motor rotates. (Rotation is in the opposite direction of Step (1). The elevator motor can rotate forward and in reverse.)	
	⑯	The rotation is transmitted to gears (A), (B), (C) and (D).	
	⑰	The rotation of gear (E) causes the CR chassis to move in the (G) direction.	
	⑱	The movement of the CR chassis causes the clamper to move and clamp the disc.	
	⑲	The movement of the CR chassis causes the home-position switch arm to move, and the home-position switch is switched on.	
	⑳	The photo-interrupter counts the H-holes on gear (C), and the elevator motor is stopped upon judgment that the CR chassis has reached the home position.	

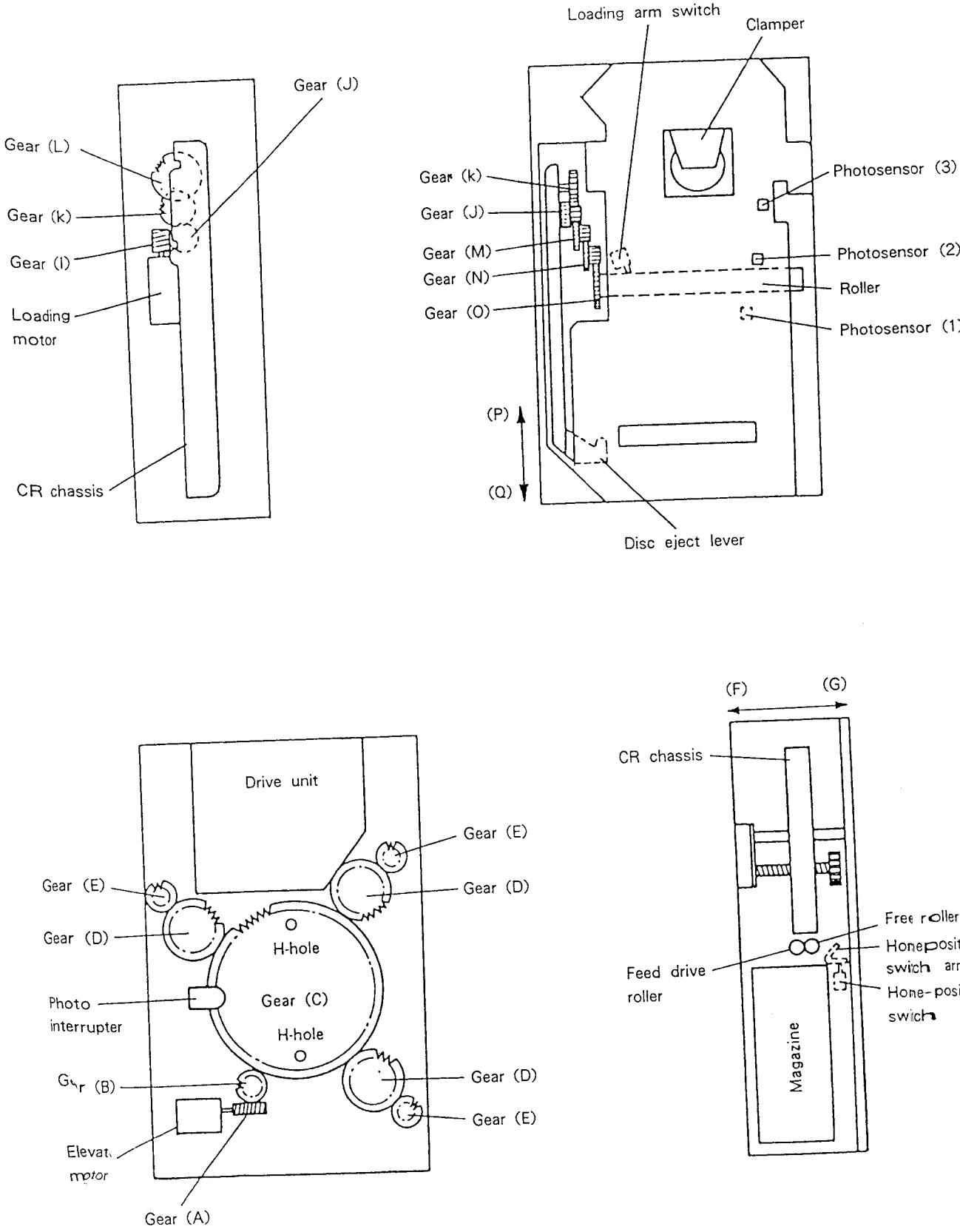

Gear (J)
Gear (L)
Gear (k)
Gear (I)
Loading motor
CR chassis
Loading arm switch
Clamper
Gear (k)
Gear (J)
Gear (M)
Gear (N)
Gear (O)
Photosensor (3)
Photosensor (2)
Roller
Photosensor (1)
(P)
(Q)
Disc eject lever
Drive unit
Gear (E)
Gear (D)
Gear (E)
Gear (D)
H-hole
Photo interrupter
Gear (C)
H-hole
Gear (B)
Gear (D)
Gear (E)
Elevat. motor
Gear (A)
(F)
(G)
CR chassis
Free roller
Home position switch arm
Home-position switch
Feed drive roller
Magazine

Figure 21

Function	Step	Description	Illustration
Play	①	The spidle motor rotates the disc.	Figure 23
	②	The rotation of the sled motor is transmitted through the gears to the feed screw and causes the pickup to move.	
	③	The lead-in position of the disc is detected by the inner limit position switch and the reading of the disc data begins.	
Return of the disc to the magazine	①	The elevator motor rotates.	Figure 21
	②	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	③	The CR chassis is moved in the (F) direction by the rotation of gear (E).	
	④	The clamper is removed.	
	⑤	The photo-interrupter counts the H-holes on gear (C) to control the movement distance of the CR chassis.	
	⑥	The disc is sandwiched between the feed drive roller and the free roller.	
	⑦	The CR chassis is stopped at the position of the first disc in the magazine. * For the 2nd through 6th disc the movement distance of the CR chassis is the only thing that changes : the operation is the same.	
	⑧	The loading motor rotates.	Figure 24
	⑨	The rotation is transmitted to gears (I), (J), (M), (N) and (O).	Figure 21
	⑩	The rotation of gear (O) causes the feed drive roller to rotate and to move in the direction of the disc magazine.	
	⑪	Blockage of photosensor (3) by the disc is cancelled.	
	⑫	The movement of the disc blocks photosensors (2) and (1) and cancels the blocking.	
	⑬	The blocking of photosensor (1) is cancelled and the disc is judged to have been housed in the magazine.	
	⑭	The loading motor stops.	

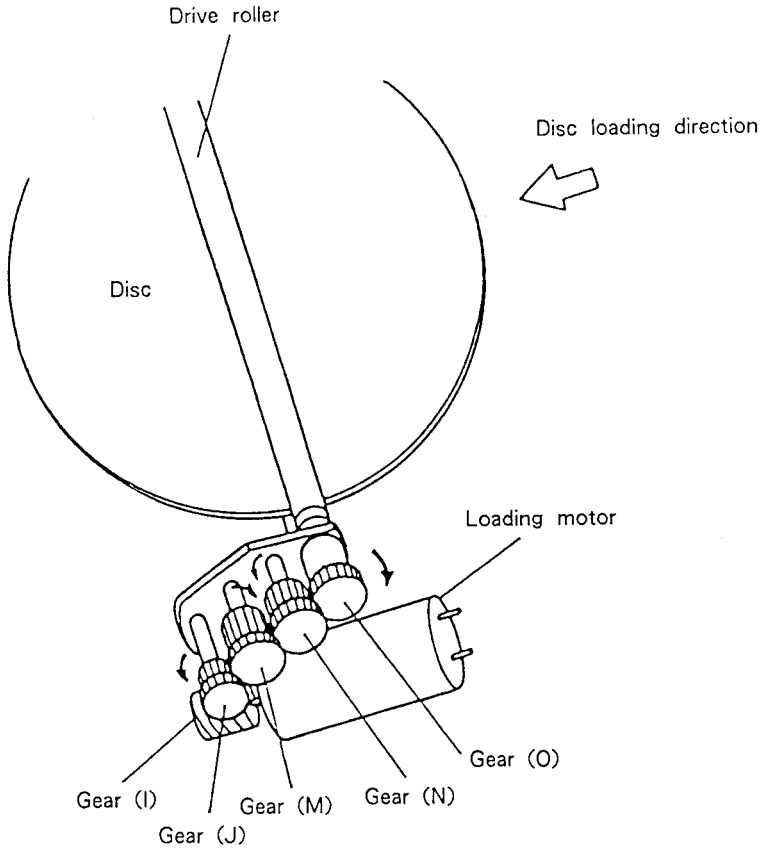


Figure 22

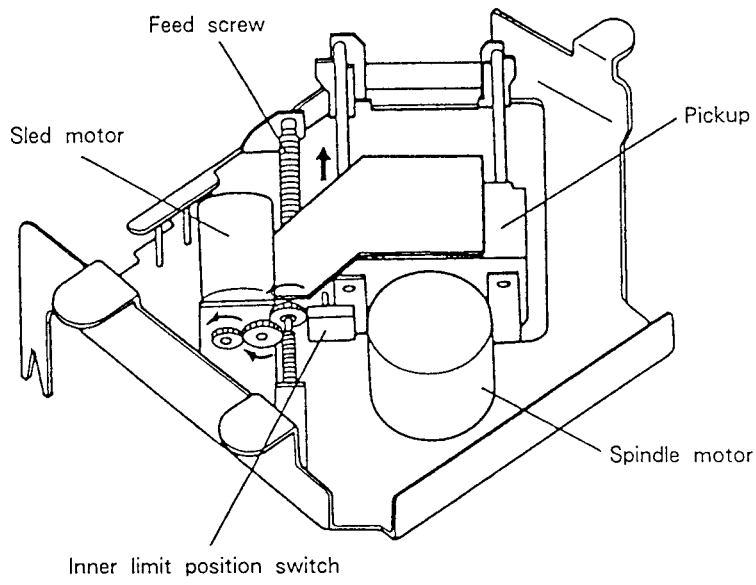


Figure 23

Function	Step	Description	Illustration
Magazine Ejection	①	Press the eject switch.	Figure 25
	②	The elevator motor rotates.	Figure 21
	③	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	④	The CR chassis is moved in the (G) direction by the rotation of gear (E).	
	⑤	The movement of the CR chassis causes the home-position switch arm to move, and the home-position switch is switched on.	
	⑥	The photo-interrupter counts the H-holes on gear (C), and the elevator motor is stopped upon judgment that the CR chassis has reached the home position.	
	⑦	The loading motor rotates.	
	⑧	The rotation is transmitted to gears (J), (K), and (L).	
	⑨	The rotation of gear (L) causes the disc eject lever to make a back-and-forth movement in the (P) and (Q) directions.	
	⑩	The disc eject lever causes the eject arm to move.	Figure 25
	⑪	The eject arm causes the eject lever to move, the magazine lock arm is released and the magazine is ejected.	
	⑫	The magazine lock switch is switched off and there is a judgment that the magazine has been ejected.	Figure 21

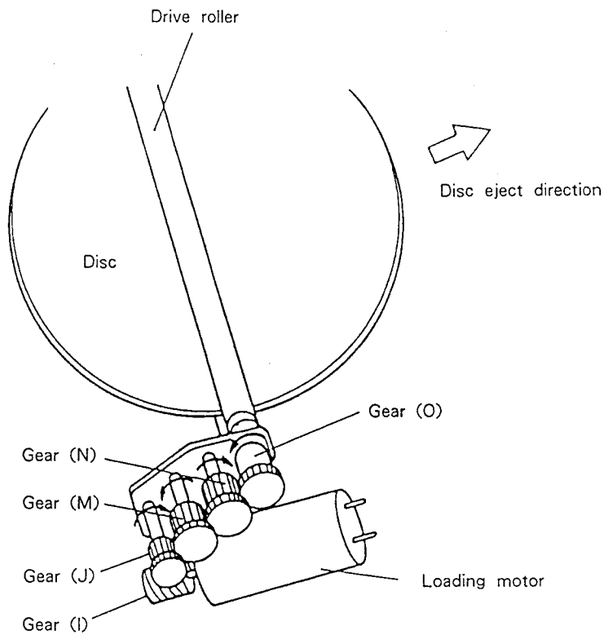


Figure 24

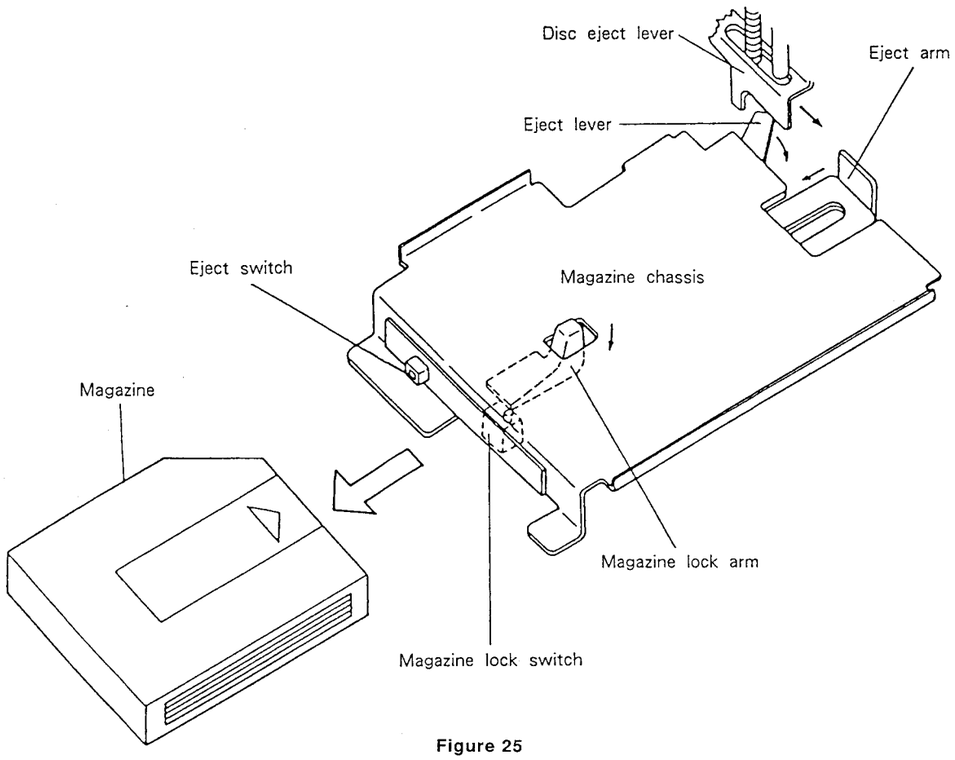
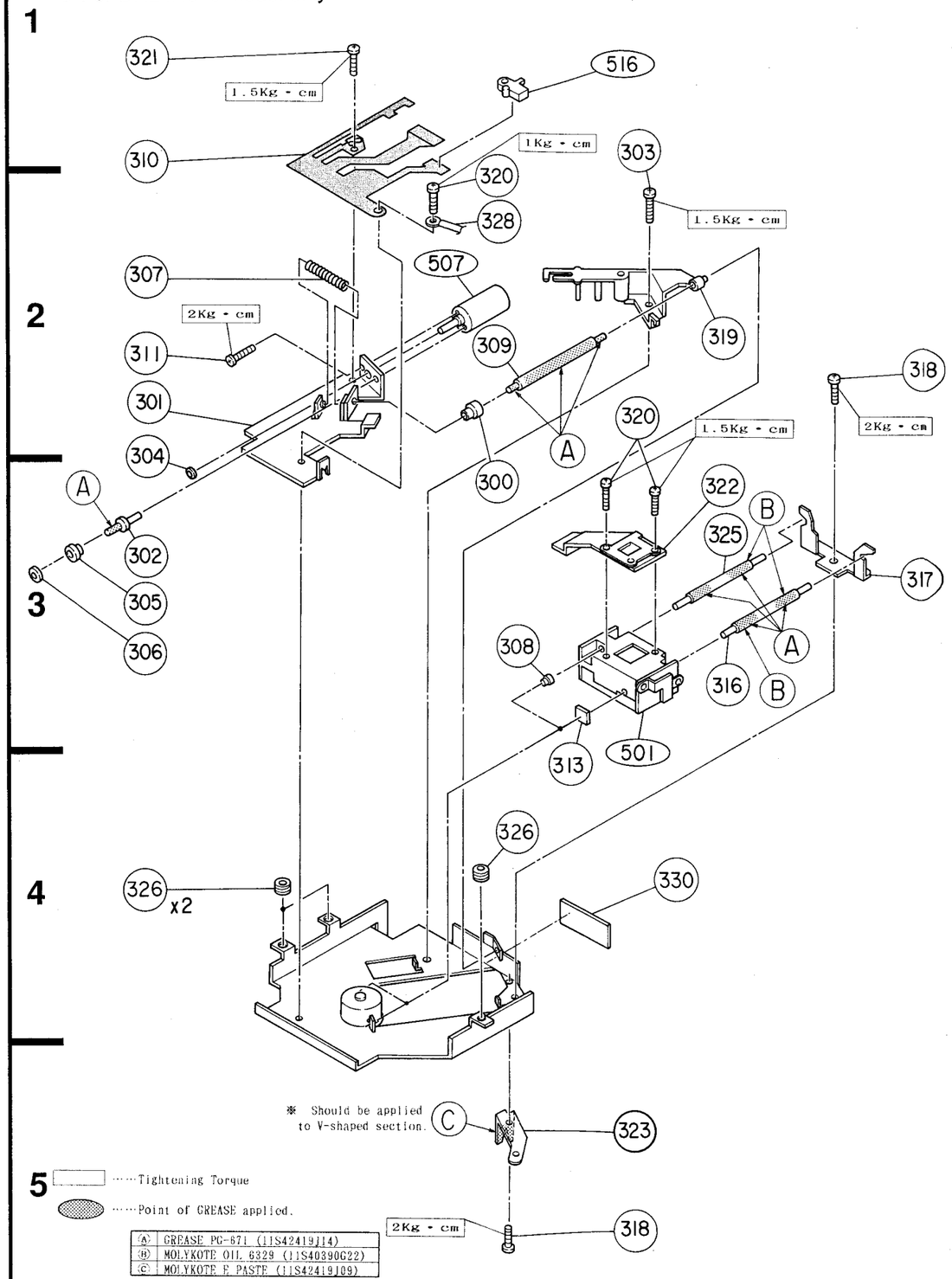


Figure 25

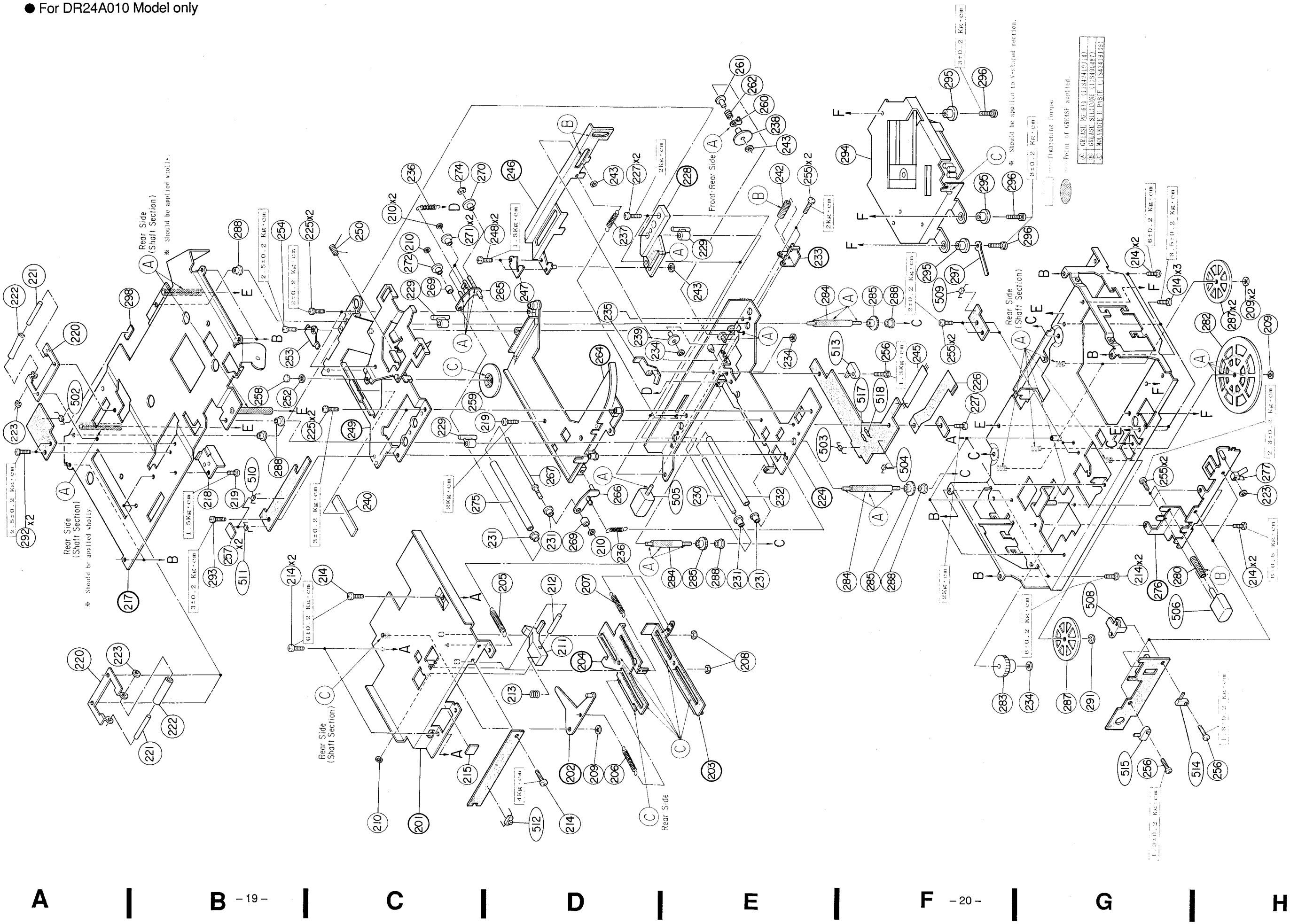
Exploded View (CD Mechanism) (1/2)

● For DR24A010 Model only



Exploded View (CD Mechanism) (2/2)

● For DR24A010 Model only


Rear Side (Shaft Section)
* Should be applied wholly.
Front Rear Side
Rear Side (Shaft Section)
Rear Side
A Grease PG-671 (1184241143)
B Grease Silicone (1154984477)
C Molykote P 54JF (1184241193)
Thrashing torque
Point of GREASE applied
* Should be applied to V-shaped section.

CD Mechanism Assembly Parts List

<For DR24A010 Model Only>

Symbol No.	Index	Part No.	Description
205	4-D	41B11514W04	Spring, Extension
206	5-D	41B11514W05	Spring, Extension
207	4-D	41B11514W06	Spring, Extension
208	4-E	04C42091G02	Ring, "E" (M3. 2)
209		04B41345P04	Washer, Lock (M2. 6)
210		04B41345P02	Washer, Lock (M1. 7)
211	4-D	45A11483W01	Arm, Lock Magazine
212	4-D	47A11405W01	Shaft, Arm Lock
213	4-D	41A11480W02	Spring, Compression
214		03S44205G30	Screw, Pan (M2. 6 X 4)
215	5-C	14S20875W87	Insulator, Cover
218	3-B	43A13109W01	Spacer, Magazine
219		03S44205G87	Screw, Pan (M2 X 4)
220		41A11425W01	Spring, M. Hold
221		47A11428W01	Roller, M. Hold
222		47A11429W01	Shaft, Roller
223		04B41345P01	Washer, Lock (M1. 2)
225		03S40014G15	Screw, W/Washer (M2 X 8)
226	3-F	84T11243W01	FPC Elevator P. C. Board
227		03S40014G61	Screw, W/Washer (M2 X 5)
229		45A11284W01	Arm, Elevator
230	3-E	47A11273W01	Shaft, Roller Under
231		43A11272W01	Bush, Roller
232	3-E	75A11925W01	Rubber, Roller
234		04B41345P13	Washer, Lock (M1. 7)
235	2-D	01A11565W01	Assy., Rivet Arm Switch DL
236		41B11514W08	Spring, Extension
237	2-D	41B11514W02	Spring, Extension
238	2-E	44A11481W01	Gear, Lever Middle
239	3-D	44B22139W01	Gear, Lever
240	3-C	75A96179F01	Sheet, Support Disc
242	2-E	44A11281W01	Worm
243		04B41345P22	Washer, Lock (M2. 6)
245	3-F	30T73687F17	Parallel, Wire (3P)
247	2-D	45A11441W01	Arm, Block A Magazine
248	2-D	03S94385F01	Screw, Pan (M1. 7 X 2. 3)
250	2-C	41A11559W01	Spring, Torsion
252	3-B	04B41345P24	Washer, Lock (M2. 1)
253	3-B	07A11468W01	Plate, Top
254	2-B	03S44205G94	Screw, Pan (M1. 7 X 2)
255		03S40014G62	Screw W/Washer (M2 X 3)
256		03S10042W06	Screw, Pan (M2 X 7)
257	4-B	75S72374F97	Cushion, Rubber
258	3-B	43A41006F01	Spacer, Polyslider
259	3-C	01A31486W01	Assy., Rivet Clamper
260	1-E	45A31789W01	Arm, Kick Gear
261	1-E	43A11485W01	Bush, Gear
262	1-E	41A11480W01	Spring, Compression
265	2-D	01A11566W01	Assy., Rivet Arm Roller
266	3-D	01A11567W01	Assy., Rivet Arm Roller (R)
267	3-D	47A11274W01	Shaft, Roller
269		47A11302W01	Roller, Lifter
270	2-C	44A11278W01	Worm
271	2-C	44A11279W01	Gear, Roller Middle
272	2-C	44A11280W01	Gear, Loading Roller
274	2-C	04C42091G06	Ring, "E" (M1. 5)
275	3-C	75A11925W01	Rubber, Roller
277	3-H	45A11265W01	Arm, Switch HP
280	4-G	44A11276W01	Worm
282	2-H	44B11283W01	Gear, Timing
283	4-F	44A11275W01	Worm Wheel
284		47A12135W01	Shaft, Screw Elevator
285		44A11277W01	Gear, Screw
287		44B11282W01	Gear, Idle
288		43A11271W01	Bearing, Screw Elevator
291	4-G	04C42091G11	Ring, "E" (M2. 5)
292	4-A	03S94385F09	Screw, Pan (M2 X 3)
293	4-B	03S44205G99	Screw, Bind (M2 X 3)
294	2-F	01V21800W05	Assy., Drive Unit
295		43A12211W01	Sleeve, Cushion

NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description		
296		03S38013W10	Screw, Pan (M2 X 7)		
297	2-F	29C41045P09	Lug, Wrap Around		
298	2-A	75A20928W01	Rubber, Top Chassis		
300	3-B	44A90998F01	Gear, Screw		
301	2-A	07C10922W02	Bracket, Motor		
302	3-A	46A91007F02	Stud, Gear		
303	1-C	03S40014G07	Screw, W/Washer (M2 X 4)		
304	2-A	44A90996F01	Gear, Motor		
305	3-A	44A90997F01	Gear, Middle		
306	3-A	04B41345P02	Washer, Lock (M1. 7)		
307	2-A	41A10928W03	Spring, Shaft-150		
308	3-B	43A13508W01	Spacer, Shaft		
309	2-B	47A10927W01	Shaft, Screw		
310	1-A	84T15149W01	FPC Actuate P. C. Board		
311	3-A	03S40014G66	Screw, W/Washer (M2 X 3. 5)		
313	4-C	75A21138W01	Sheet, Shaft		
316	3-C	47A20146W01	Shaft, Pick-Up-50°		
317	3-D	07A10921W01	Bracket, Shaft		
318		03S40014G62	Screw, W/Washer (M2 X 3)		
319	2-C	07B10923W01	Bracket, Screw		
320		03D40121T38	Screw, W/Double Washer (M2 X 5)		
321	1-A	03S40014G69	Screw, W/Washer (M2 X 8. 5)		
322	3-C	41C10925W02	Spring, Nut		
325	3-C	47A21175W01	Shaft, Pick-Up -50°(B)		
326		75A12210W01	Rubber, Cushion		
328	2-B	01T70458F02	Assy., GND Wire		
330	4-C	14S81482F10	Insulator, Cover		

Symbol No.	Index	Part No.	Description		
			Miscellaneous		
501	3-C	88T15309W01	Pick-Up SF-87. 5		
502	3-A	48T16057W01	LED, AN501 (RED)		
503	3-E	48T16057W02	LED, AN501-B1 (RED)		
504	3-F	48T16057W02	LED, AN501-B1 (RED)		
505	3-E	59T90879F01	Motor, Load 6V-260mA (LOADING)		
506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)		
507	2-C	59T52973F03	Motor, Servo 6V-210mA (SLED)		
508	4-G	48T15722W01	Interrupter Photo, GP1S51		
509	2-F	48T15938W02	TR., Photo PS5022		
510	3-B	48T15938W02	TR., Photo PS5022		
511	4-B	48T15938W02	TR., Photo PS5022		
512	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
513	3-E	40T71025F01	Switch, Detector (LOADING)		
514	5-H	40T71025F01	Switch, Detector (HOME POSITION)		
515	5-G	40T71025F01	Switch, Detector (MAGAZINE)		
516	1-C	40T71025F01	Switch, Detector (LIMIT)		

NOTE : The parts without part numbers are not supplied.

CD Mechanism Assembly Parts List

<For DR24A020 Model Only>

Symbol No.	Index	Part No.	Description		
205	4-D	41B11514W04	Spring, Extension		
206	5-D	41B11514W05	Spring, Extension		
207	4-D	41B11514W06	Spring, Extension		
208	4-E	04B41345P39	Washer, Lock (M3. 5)		
209		04B41345P04	Washer, Lock (M2. 6)		
210		04B41345P02	Washer, Lock (M1. 7)		
211	4-D	45A11483W01	Arm, Lock Magazine		
212	4-D	47A11405W01	Shaft, Arm Lock		
213	4-D	41A11480W02	Spring, Compression		
214		03S44205G30	Screw, Pan (M2. 6 X 4)		
215		04C42091G06	Ring, "E" (M1. 5)		
218		03S44205G99	Screw, Bind (M2 X 3)		
219	3-C	03S44205G87	Screw, Pan (M2 X 4)		
220		43A11271W01	Bearing, Screw Elevator		
221		44B11282W01	Gear, Idle		
222		44A11277W01	Gear, Screw		
223		04B41345P01	Washer, Lock (M1. 2)		
225		03S38013W07	Screw, Pan (M2 X 8. 5)		
226	3-F	84T11243W01	EPC Elevator P. C. Board		
227		03S44205G95	Screw, Bind (M2 X 4)		
229		45A11284W01	Arm, Elevator		
230	3-E	01A40510W01	Assy., Shaft Roller Under		
231		43A11272W01	Bush, Roller		
232	4-G	04C42091G11	Ring, "E" (M2. 5)		
233		47A12135W01	Shaft, Screw Elevator		
234		04B41345P13	Washer, Lock (M1. 7)		
235	3-D	01A11565W01	Assy., Rivet Arm Switch		
236		41B11514W08	Spring, Extension		
237	2-D	41B11514W02	Spring, Extension		
238	2-E	44A11481W01	Gear, Lever Middle		
239	2-E	44B22139W01	Gear, Lever		
240	4-F	41A31495W01	Spring, Elevator		
242	2-E	44A11281W01	Worm		
243	2-E	04B41345P22	Washer, Lock (M2. 6)		
245	3-F	30T73687F17	Wire, Parallel (3P)		

Symbol No.	Index	Part No.	Description		
247	2-D	45A11441W01	Arm, Block A Magazine		
248	2-D	03S94385F01	Screw, Pan (M1.7 X 2. 3)		
250	2-C	41A11559W01	Spring, Torsion		
252	3-B	04B41345P24	Washer, Lock (M2. 1)		
253	3-B	07A31787W01	Plate, Top		
254	2-B	03S44205G94	Screw, Pan (M1.7 X 2)		
255		03S40014G62	Screw, W/Washer (M2 X 3)		
256		03S10042W06	Screw, Pan (M2 X 7)		
257	2-G	29C41045P09	Lug, Wrap Around		
258	3-B	43A41006F01	Spacer, Polyslider		
259	3-C	01A31782W01	Assy., Rivet Clamper		
260	2-E	45A31789W01	Arm, Kick Gear		
261	2-E	43A11485W01	Bush, Gear		
262	2-E	41A11480W01	Spring, Compression		
265	2-D	01A31779W01	Assy., Rivet Arm Roller (L)		
266	3-D	01A31780W01	Assy., Rivet Arm Roller (R)		
267	3-D	01A40509W01	Assy., Shaft Roller		
268	4-F	44A11275W01	Worm, Wheel		
269		47A11302W01	Roller, Lifter		
270	2-C	44A11278W01	Worm		
271	2-C	44A11279W01	Gear, Roller Middle		
272	2-C	44A11280W01	Gear, Loading Roller		
273		03S38013W10	Screw, Pan (M2 X 7)		
274	2-G	44B11283W01	Gear, Timing		
275		43A12211W01	Sleeve, Cushion		
277	3-H	45A31790W01	Arm, Switch HP		
278	2-F	01V21800W05	Assy., Drive Unit		
280	4-G	44A11276W01	Worm		
282	3-C	43A41006F01	Spacer, Polyslider		
283		03S40014G12	Screw, W/Washer (M2.6 X 4)		
284		41A11425W01	Spring, M. Hold		
285		47A11428W01	Roller, M. Hold		
286		47A11429W01	Shaft, Roller		
287		03S44205G96	Screw, Bind (M2 X 5)		
300	3-B	44A90998F01	Gear, Screw		
301	2-A	07C10922W02	Bracket, Motor		
302	3-A	46A91007F02	Stud, Gear		
303	2-C	03S40014G07	Screw, W/Washer (M2 X 4)		
304	2-A	44A90996F01	Gear, Motor		
305	3-A	44A90997F01	Gear, Middle		

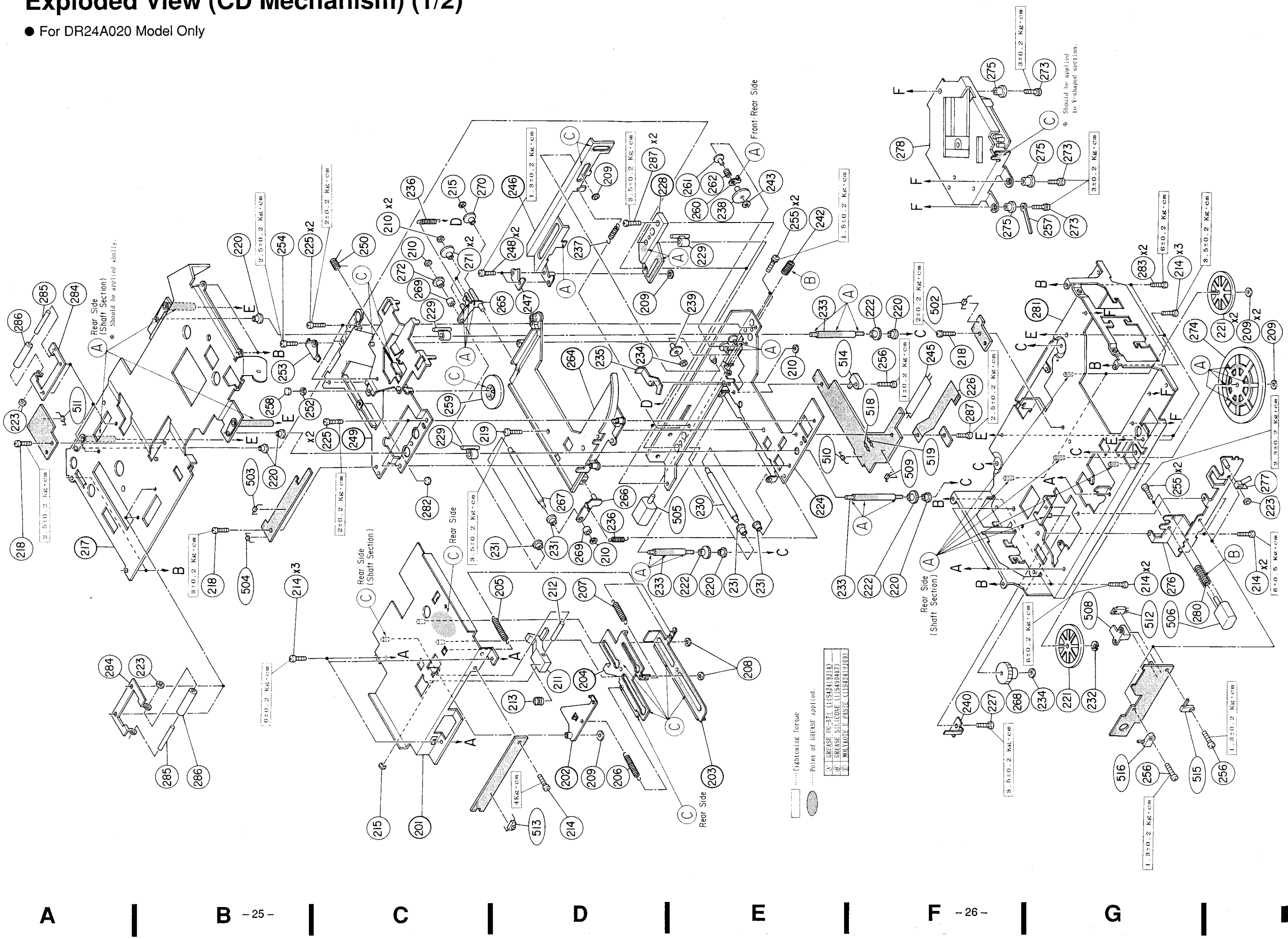
NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description		
306	3-A	04B41345P02	Washer, Lock (M1. 7)		
307	2-A	41A10928W03	Spring, Shaft-150		
308	3-B	43A13508W01	Spaceer, Shaft		
309	2-B	47A10927W01	Shaft, Screw		
310	2-A	84T15149W01	FPC Actuate P. C. Board		
311	2-A	03S40014G66	Screw, W/Washer (M2 × 3. 5)		
312	2-B	01T70458F02	Assy., GND Wire		
313	4-C	75A21138W01	Sheet, Shaft		
315		75A12210W01	Rubber, Cushion		
316	3-C	47A20146W01	Shaft, Pick-Up-50°		
317	3-D	07A10921W01	Bracket, Shaft		
318		03S40014G62	Screw, W/Washer (M2 × 3)		
319	2-C	07B10923W01	Bracket, Screw		
320		03D40121T38	Screw, W/Double Washer (M2 × 5)		
321	1-B	03S40014G69	Scerw, W/Washer (M2 × 8. 5)		
322	3-C	41C10925W02	Spring, Nut		
324	3-C	47A21175W01	Shaft, Pick-Up-50° (B)		
325	4-C	14S81482F10	Insulator, Cover		
			Miscellaneous		
501	4-C	88T15309W01	Pick-Up Unit SF-87. 5		
502	2-F	48T16057W01	LED, AN501 (RED)		
503	3-B	48T16057W01	LED, AN501 (RED)		
504	4-B	48T16057W01	LED, AN501 (RED)		
505	3-D	59T90879F01	Motor, Load 6V-260mA (LOADING)		
506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)		
507	2-B	59T52973F03	Motor, Servo 6V-210mA (SLED)		
508	4-G	48T15722W01	Interrupter, Photo GP1S51		
509	3-F	48T15938W03	Transistor, Photo PS5022-B1		
510	3-E	48T15938W03	Transistor, Photo PS5022-B1		
511	3-A	48T15938W02	Transistor, Photo PS5022		
512	4-G	48T51089F04	Transistor, 2SA937		
513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
514	3-E	40T71025F01	Switch, Detector (LOADING)		
515	5-G	40T71025F01	Switch, Detector (HOME POSITION)		
516	5-G	40T71025F01	Switch, Detector (MAGAZINE)		
517	1-C	40T71025F01	Switch, Detector (LIMIT)		

NOTE : The parts without part numbers are not supplied.

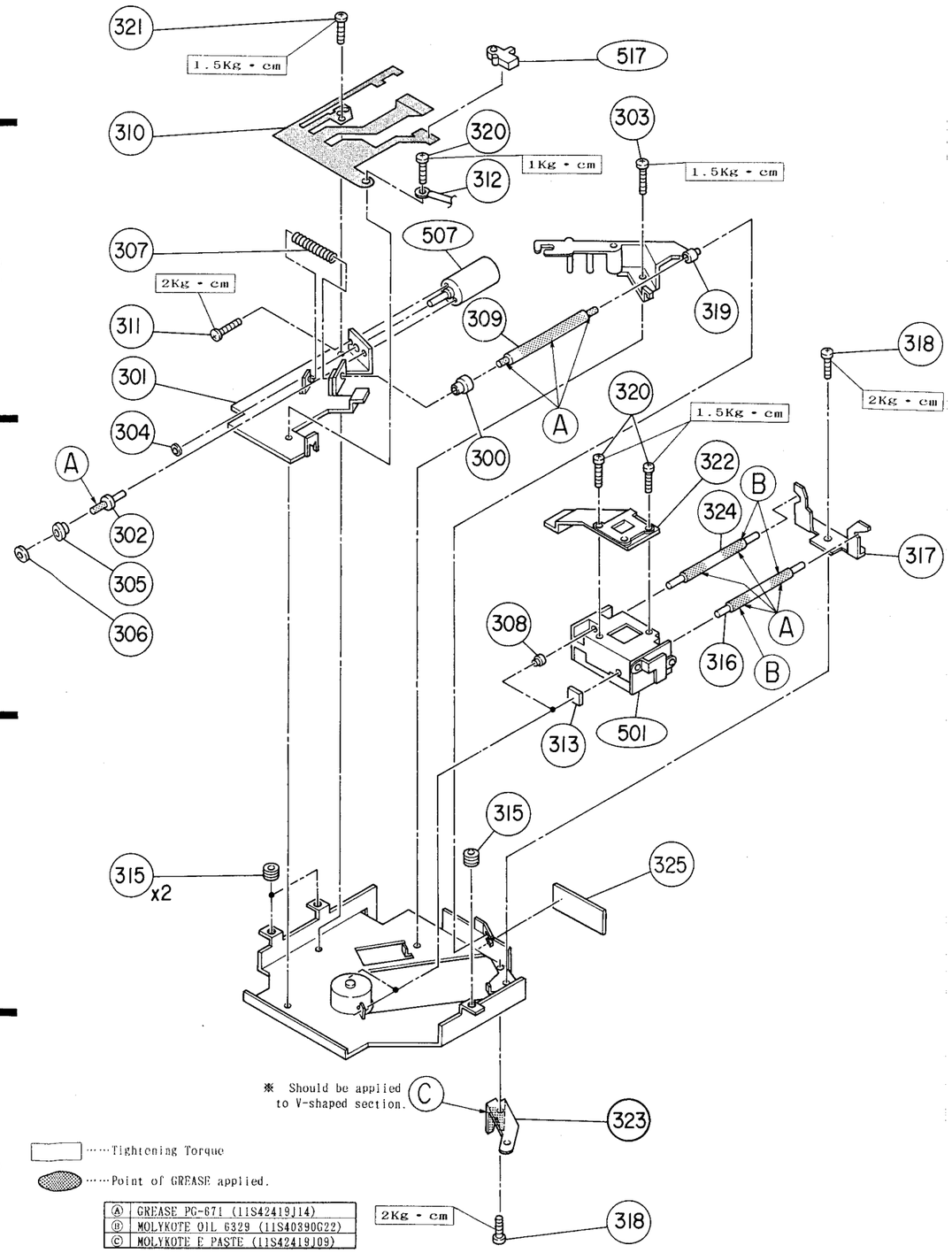
Exploded View (CD Mechanism) (1/2)

● For DR24A020 Model Only



Exploded View (CD Mechanism) (2/2)

● For DR24A020 Model only



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CD Mechanism Assembly Parts List

<For DR24A02A/030/040 Model Only>

Symbol No.	Index	Part No.	Description		
205	4-D	41B11514W04	Spring, Extension		
206	5-D	41B11514W05	Spring, Extension		
207	4-D	41B11514W06	Spring, Extension		
208	4-E	04B41345P39	Washer, Lock (M3. 5)		
209		04B41345P04	Washer, Lock (M2. 6)		
210		04B41345P02	Washer, Lock (M1. 7)		
211	4-D	45A11483W01	Arm, Lock Magazine		
212	4-D	47A11405W01	Shaft, Arm Lock		
213	4-D	41A11480W02	Spring, Compression		
214		03S44205G30	Screw, Pan (M2. 6 X 4)		
215		04C42091G06	Ring, "E" (M1. 5)		
218		03S44205G99	Screw, Bind (M2 X 3)		
219	3-C	03S44205G87	Screw, Pan (M2 X 4)		
220		43A11271W01	Bearing, Screw Elevator		
221		44B11282W01	Gear, Idle		
222		44A11277W01	Gear, Screw		
223	3-H	04B41345P01	Washer, Lock (M1. 2)		
225		03S38013W07	Screw, Pan (M2 5 8. 5)		
226	3-F	84T11243W01	EPC Elevator P. C. Board		
227	4-F	03S44205G95	Screw, Bind (M2 X 4)		
229		45A11284W01	Arm, Elevator		
230	3-E	01A40510W01	Assy., Shaft Roller Under		
231		43A11272W01	Bush, Roller		
232		04C42091G11	Ring, "E" (M2. 5)		
233		47A12135W01	Shaft, Screw Elevator		
234		04B41345P13	Washer, Lock (M1. 7)		
235	3-D	01A11565W01	Assy., Rivet Arm Switch		
236		41B11514W08	Spring, Extension		
237	2-D	41B11514W02	Spring, Extension		
238	2-E	44A11481W01	Gear, Lever Middle		
239	2-E	44B22139W01	Gear, Lever		
240	4-F	41A31495W01	Spring, Elevator		
242	2-E	44A11281W01	Worm		
243	2-E	04B41345P22	Washer, Lock (M2. 6)		
245	3-F	30T73687F17	Wire, Parallel (3P)		

Symbol No.	Index	Part No.	Description		
247	2-D	45A11441W01	Arm, Block A Magazine		
248	2-D	03S94385F01	Screw, Pan (M1.7 X 2. 3)		
250	2-C	41A11559W01	Spring, Torsion		
252	3-B	04B41345P24	Washer, Lock (M2. 1)		
253	3-B	07A31787W01	Plate, Top		
254	2-B	03S44205G94	Screw, Pan (M1.7 X 2)		
255		03S40014G62	Screw, W/Washer (M2 X 3)		
256		03S10042W06	Screw, Pan (M2 X 7)		
257	2-G	29C41045P09	Lug, Wrap Around		
258	3-B	43A41006F01	Spacer, Polyslider		
259	3-C	01A31782W01	Assy., Rivet Clamper		
260	2-E	45A31789W01	Arm, Kick Gear		
261	2-E	43A11485W01	Bush, Gear		
262	2-E	41A11480W01	Spring, Compression		
265	2-D	01A31779W01	Assy., Rivet Arm Roller (L)		
266	3-D	01A31780W01	Assy., Rivet Arm Roller (R)		
267	3-D	01A40509W01	Assy., Shaft Roller		
268	4-F	44A11275W01	Worm, Wheel		
269		47A11302W01	Roller, Lifter		
270	2-C	44A11278W01	Worm		
271	2-C	44A11279W01	Gear, Roller Middle		
272	2-C	44A11280W01	Gear, Loading Roller		
273		03S38013W10	Screw, Pan (M2 X 7)		
274	2-G	44B11283W01	Gear, Timing		
275		43A12211W01	Sleeve, Cushion		
277	3-H	45A31790W01	Arm, Switch HP		
□ 278	2-F	01V43800W61	Assy., Drive Unit		
○ 278	2-F	01V43500W73	Assy., Drive Unit		
△ 278	2-F	01V43500W73	Assy., Drive Unit		
280	4-G	44A11276W01	Worm		
282		03S44205G96	Screw, Bind (M2 X 5)		
283		03S40014G12	Screw, W/Washer (M2. 6 X 4)		
300	3-B	44A90998F01	Gear, Screw		
301	2-A	07C10922W02	Bracket, Motor		
302	3-A	46A91007F02	Stud, Gear		

NOTE : The parts without part numbers are not supplied.

□ : For DR24A02A Model Only, ○: For DR24A030 Model Only, △: For DR24A040 Model Only, Others : Common.

Symbol No.		Index	Part No.	Description		
	303	2-C	03S40014G07	Screw, W/Washer (M2 × 4)		
	304	2-A	44A90996F01	Gear, Motor		
	305	3-A	44A90997F01	Gear, Middle		
	306	3-A	04B41345P02	Washer, Lock (M1. 7)		
	307	2-A	41A10928W03	Spring, Shaft-150		
	308		07A30961W01	Stopper, Shaft (B)		
	309	2-B	47A10927W02	Shaft, Screw		
□	310	1-A	84T15149W01	FPC Actuate P. C. Board		
○	310	1-A	84T45270W01	FPC Actuate P. C. Board		
△	310	1-A	84T45270W01	FPC Actuate P. C. Board		
	311	2-A	03S40014G66	Screw, W/Washer (M2 × 3. 5)		
	312	2-B	01T70458F02	Assy., GND Wire		
	313		03S70494F17	Screw, Pan (M1. 7 × 8)		
	315		75A12210W01	Rubber, Cushion		
	316	3-C	47A30925W01	Shaft, Pick-Up		
	317	1-B	07A40743W01	Bracket		
□	318	3-B	04S40075G61	Washer, Polyslider (M2. 1)		
○	318	3-B	04S40075G06	Washer, Polyslider (M2. 1)		
△	318	3-B	04S40075G06	Washer, Polyslider (M2. 1)		
	319	2-C	07B10923W01	Bracket, Screw (M2. 1)		
	320		03D40121T38	Screw, W/Double Washer (M2 × 5)		
	321	1-B	03S40014G69	Scerw, W/Washer (M2 × 8. 5)		
	322	3-C	41C10925W02	Spring, Nut		

Miscellaneous

	501	4-C	88T15309W01	Pick-Up Unit SF-87. 5		
	502	2-F	48T16057W01	LED, AN501 (RED)		
	503	3-B	48T16057W01	LED, AN501 (RED)		
	504	4-B	48T16057W01	LED, AN501 (RED)		
	505	3-D	59T90879F01	Motor, Load 6V-260mA (LOADING)		
	506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)		
	507	2-B	59T52973F03	Motor, Servo 6V-210mA (SLED)		
	508	4-G	48T15722W01	Interrupter, Photo GP1S51		
	509	3-F	48T15938W03	Transistor, Photo PS5022-B1		
	510	3-E	48T15938W03	Transistor, Photo PS5022-B1		

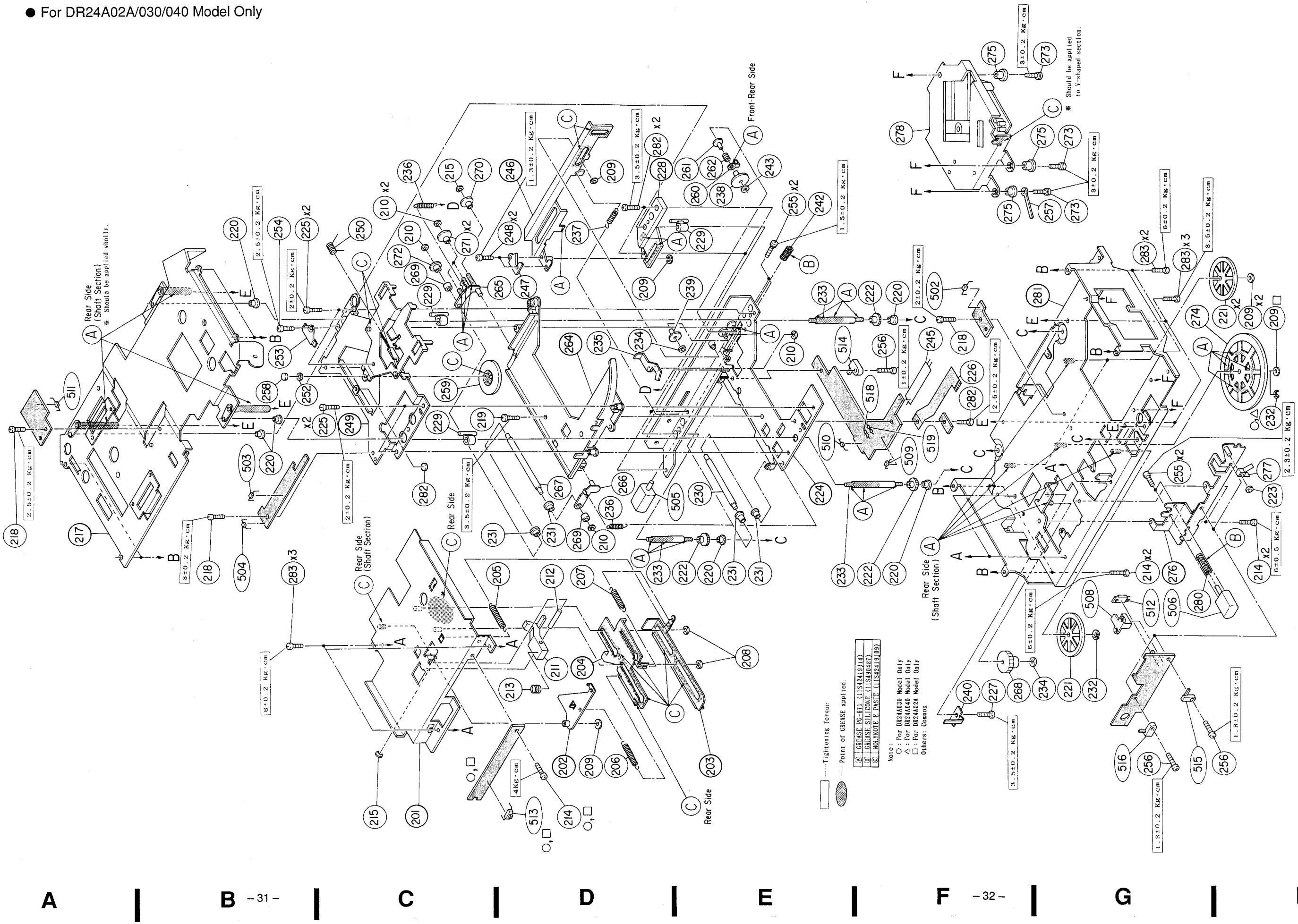
Symbol No.		Index	Part No.	Description		
	511	3-A	48T15938W02	Transistor, Photo PS5022		
	512	4-G	48T51089F04	Transistor, 2SA937		
□	513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
○	513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
	514	3-E	40T71025F01	Switch, Detector (LOADING)		
	515	5-G	40T71025F01	Switch, Detector (HOME POSITION)		
	516	5-G	40T71025F01	Switch, Detector (MAGAZINE)		
	517	1-C	40T71025F01	Switch, Detector (LIMIT)		

NOTE : The parts without part numbers are not supplied.

□ : For DR24A02A Model Only, ○ : For DR24A030 Model Only, △ : For DR24A040 Model Only, Others : Common.

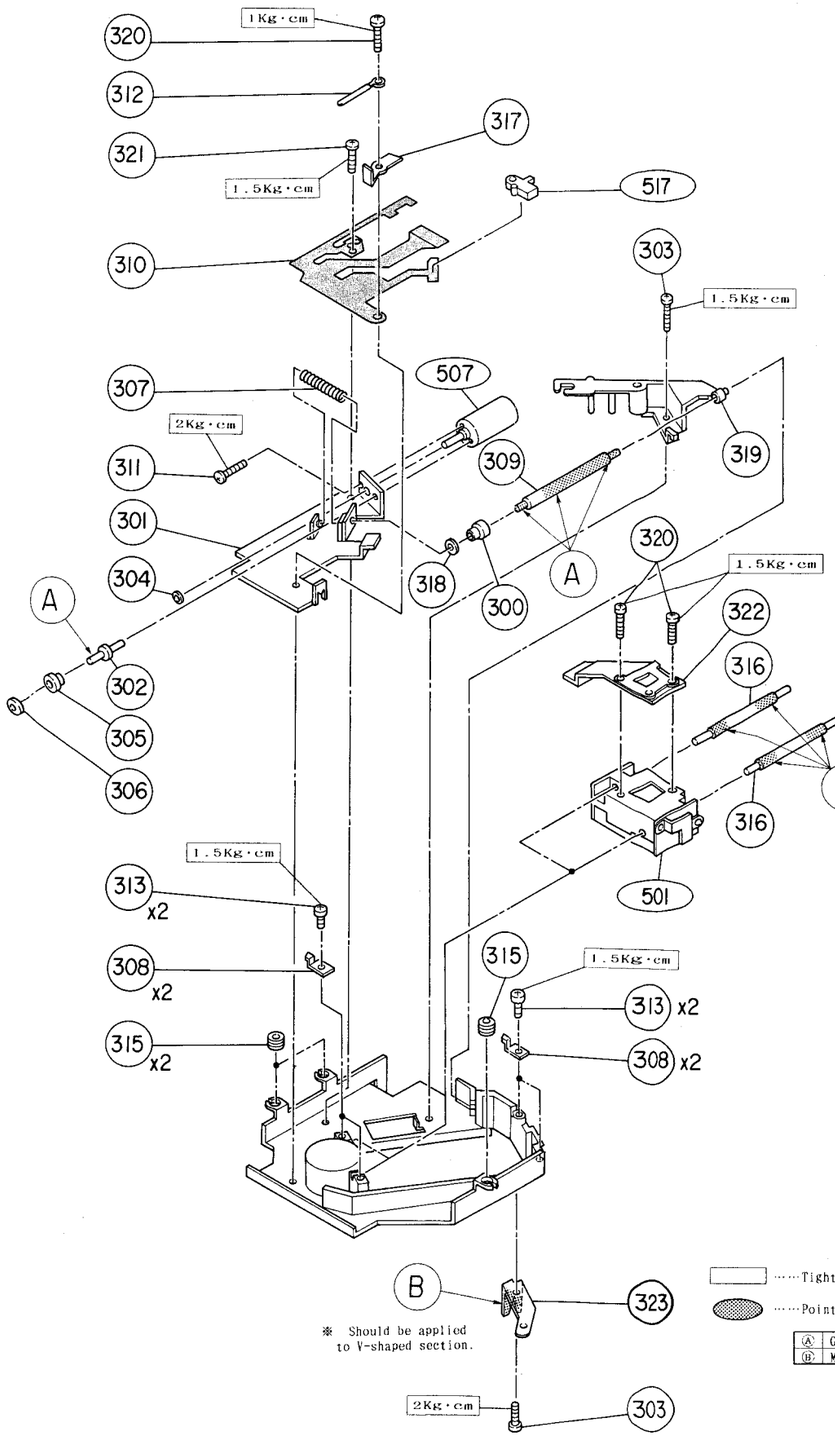
Exploded View (CD Mechanism) (1/2)

● For DR24A02A/030/040 Model Only



Exploded View (CD Mechanism) (2/2)

● For DR24A02A/030/040 Model only



Memo

ALPINE ELECTRONICS INC.
Tokyo Office : 1-1-8 Nishi Gotanda,
Shinagawa-ku, Tokyo, Japan 141
Phone 03-3494-1101 Telex 8927-61

ALPINE ELECTRONICS OF AMERICA, INC.
19145 Gramercy Place
Torrance, California 90501
Phone 213-326-8000

ALPINE ELECTRONICS OF CANADA, INC.
605 Alden RD Markham,
Ontario L3R 3L5 Canada
Phone 416-475-7280 Telex 06-986789

ALPINE ELECTRONICS GmbH
Brandenburger Str. 2-4.
4030 Ratingen F.R. Germany
Phone 001-49-2102-4550 Telex 8589157
Fax 001-49-2102-445321

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